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HOW CAN I CURE MY INDIGESTION?

BY

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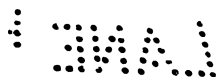
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CHAPTER I.

THE SILENT FUNCTIONS.

A careful study of the human body brings to light ever more interesting adjustments of means to ends. Not only in its anatomy and physiology, but also in its philosophical aspects, is the body wonderfully made, most beautifully adapted to the environment in which it moves and functions.

Among the interesting facts revealed by a contemplation of the wonderful organism with which man is provided, or in which he is incorporated, there is none more deserving of attention than this fact—that the body senses are all directed outward! Hearing, taste, smell, sight, touch are placed like sentinels on the outposts of the body. Some of them are designed for the observation of distant conditions, some for the appreciation of objects which have come into immediate contact with the body, some for the examination of substances which are to be introduced into the interior of the body.

The whole body surface is clad in an exquisitely sensitive tunic—the skin.

The inward parts of the body, on the contrary, the great organs and diverse tissues which constitute its mass and upon which its life so largely depends, are in health but slightly sensitive. The great functions of circulation and digestion proceed silently, and in health, unconsciously. There are millions of happy individuals in the world who do not know where the heart is located—that silent workman upon whose exact and faithful labor their life every moment depends. We put into our mouths day by day for our nourishment great quantities of the most varied articles, solid and liquid, yet how many of us can tell exactly where the pouch, in which for hours we put them, is located or what its size and shape?

It is evidently the intention of the designer of the human body that the human mind should not be occupied with internal economical considerations, but should concern itself with the affairs of the outside world. This is the normal attitude of the human mind. It is the attitude of health.

The continual turning of the attention in-

ward is a violation of nature's laws. It is bad for the mind, it interferes with the unconscious automatic inward functions. They cannot work smoothly and well under the close attention of the brain. If disease forces the condition and functions of inward organs upon the mind, it is the duty of the physician and for the interest of the patient, that the original and natural unconsciousness of internal processes should be restored as quickly as possible.

Interrupted Health.

Unfortunately for man, the beautiful order of nature which permits him to remain ignorant of his interior economies cannot always be maintained. Our contemplation of the world without, of the stellar spaces above us, is often very disagreeably interrupted by loss of outward rotundity and the comeliness therewith associated or by sundry reprehensible sensations in our insides; and it becomes gradually evident that the automatic unconscious processes have gotten somehow out of gear.

The physician is ultimately called in, and

literally oils the machinery ; adjusts the relations of different parts to one another by proper tonics ; perhaps hangs up the whole machine (an expression borrowed from the watchmaker) for a week or two by "putting it to bed." Under his wise care things get all right again and the disagreeable sensations cease. But too much doctoring is bad for the patients' bread and butter account, oiling the machinery is disagreeable and putting to bed interferes with many important duties and pleasures of life ; and so it comes about that those thoughtful people who happen to be furnished with interior works which do not run with normal quietude desire to be instructed a little in the avoidance of causes of inward disturbance, and in the general principles on which restoration to the normal is to be secured. It is to meet this need that popular treatises like the present are published. The wise man instructed thereby will continue wise, not meddling with things too high for him, and the foolish man so instructed—well, he will probably be as foolish as before, deserving therefore no consideration in the matter.

CHAPTER II.

THE ANATOMY OF DIGESTION.

In our title we do not refer to a particular region of the body—to that portion of the anatomy extending from the breast bone above to the hips below in which ladies are accustomed, when conversing with their family physician, to locate their stomach disquietudes; nor do we refer solely to that upper part of the digestive tract into which food immediately passes from the mouth. It would take an expert to determine in every case in what part of the digestive tract indigestions and weaknesses of function are located; so we shall consider the digestive region as a whole.

The Normal Process.

The series of organs under consideration—stomach and bowel—is some twenty-five feet long, and may be considered as the kitchen department of the body. At its up-

per portion we have the stomach proper, a hollow muscular pouch which receives the food from the mouth and detains it for an hour or two, until the first steps of digestion are well under way. This food, which has during its brief stay in the mouth been crushed into a fine pulp and mixed with saliva, is in the stomach mixed with large quantities of an acid digestive liquid—the gastric juice. During this admixture in the stomach the whole mass is carried by muscular contraction up and down the length of the stomach and round and round in its cavity, this continual “churning” being necessary to perfect action of the digestive forces. We shall see later that a sluggishness of this “churning movement” is one of the causes of ordinary dyspepsia.

After the food has been partly digested in the stomach, and all hard lumps of food softened down, it passes through the *pylorus* or gateway of the stomach—a very intelligent sentinel, which usually will not let things unwholesome or unfit pass its portal—into that portion of the bowel which is next to the liver. Here the bile and other juices are poured upon it in large quantities,

causing further digestion of the nutritious portions. It is in this region that "bilious attacks" originate, associated often with disorder of the stomach above, the bitter bile coming up into the stomach and at times being tasted.

After passing the liver region, the softened food passes slowly down the small intestines to the pouch called the large bowel, the nutritious portions being taken into "lacteal" vessels, which empty it into the great veins and the undigested residues passing on into the large bowel. In the large bowel the last nutritious portions of the contents are absorbed for tissue use, and the much thickened wastes lie quiet awaiting the daily evacuation which occurs in all healthy persons, with perhaps a very few exceptions.

The Value of Regularity.

Upon the absorption of the digested food by the bowel walls depends the nourishment of the whole body; the happy conduct of the whole life; upon the daily evacuation of the digestive wastes depends the purity of the

blood, the comfort of the nervous system, and to a large extent that sweetness of temper and cheerfulness of outlook which make some people so companionable and eager for industrial enterprises.

It is alleged that the modern gynæcological hospital is founded upon long-continued neglect of the bowel evacuation; and it is strongly suspected that the now-fashionable appendicitis operation would fall into disuse if the old fashioned mother were here with her spring cleaning—sulphur and molasses, etc.,—and the old fashioned doctor were within reach with his bowls of nasty senna tea and the like.

Elegance has its penalties, and the daintiest medicine is a delusion and a snare when thorough cleansing is needed. It is not good to play at medicine. The best medicine is that which can be depended on to do its work safely and thoroughly. The neatly coated pill, so pretty and easy to swallow, is often quite insoluble in digestive juices enfeebled by disease. A scratch through the hard coating of sugar or gelatine, a pin hole or two in the gelatin capsule, is the least that we owe to our internal economy if we would

receive benefit and not positive injury by its administration.

These remarks may seem foreign to our theme, but they are not so; for "indigestion" is often merely a symptom of the sluggish bowel.

CHAPTER III.

SOME FORMS OF INDIGESTION.

The Repleted Stomach.

Appetite is a thing to be thankful for. What is appetite, anyway? How is it produced?

If we were to analyze it we should say that its original foundation is an empty stomach. The next important thing is something that tastes good, or something that we feel certain will go "right to the spot."

The healthy appetite is very positive in its demand for satisfaction, very easily pleased, and knows when it has had enough. There are doubtless people in the world who never experience the delights of appetite. In many of these unfortunate beings probably the stomach is never completely emptied. The materials taken in at a meal linger for days ill-digested in the stomach and upper bowel. These patients are never ready for dinner, because breakfast has not

been satisfactorily disposed of; supper is loathsome, because breakfast and dinner still linger. Many such cases are found among wealthy and indolent persons. Among such are those boarders in summer hotels who for months never go beyond the hotel porch, where they sit idly exchanging complaints about the abominable fare of the table, or taking doses (big or little, as fancy leads) of medicines to relieve indigestion.

It is said that in ancient Sparta the male citizens all ate at a public table, one of the regular dishes—a chief part of the meal—being an unattractive black broth. When a visitor of luxurious tastes asked what they seasoned this broth with, his Spartan friend replied “with hunger.” The daily warlike exercises that this nation of fighters went through gave them an appetite that found almost any food good.

It is so with thirst also. An old soldier told the writer that the best-tasting drink of water he ever had was from a mud puddle in the road that a troop of cavalry had just splashed through.

The indolent man or woman’s “grace” be-

fore meals does not have energy enough to go above the ceiling. A half-hour of wood-chopping, or Indian clubs, or a good "chamber exerciser," or a brisk walk will do more to improve the coffee at breakfast than any number of new-patent coffee-pots.

The repleted stomach is a chronic grumbler, a conceited critic and a heathen, doomed to a hell of dissatisfaction for life.

The Tired Stomach.

While exercise is necessary to perfect digestion, it is also true that overfatigue renders the stomach unable properly to perform its functions. A great deal of the dyspepsia in the community is due to ignorance of this fact. The child who has played violently all the forenoon, until he is utterly worn out, is allowed to eat at once on his return to the house a heavy meal; and spends the night in a struggle with nightmare or the cramps.

The elderly person who has shopped all morning in the hot August sun returns late for dinner and sits down at once to a hurried meal, and an attack of alarming indigestion is the consequence. It is much bet-

ter that a tired person should lie down and rest for a quarter of an hour before a meal; and that the heat-exhausted stomach should be refreshed by some simple liquid food, such as a glass of milk or a cup of beef broth, the heavier meal being put off until a little later.

A very important element in the causation of the digestive disorders of midsummer is the heat fatigue of the nervous system, which renders the stomach temporarily unfit for the digestion of many things which in cooler winter it could easily manage.

The Starved Stomach.

It is said that there are many women who care so little for eating that, if they did not have men to set the table for, they would never have a regular meal. Some such women lack almost wholly that animal delight in the mere act of eating which exists in all normal creatures. Some are so indifferent to the laws of nature that they have let themselves fall into the habit of "picking a little" here and there at frequent and irregular times. The delight which men of

the family take in the good things of the table is to them "perfectly disgusting," "really brutal."

The woman of such angelic ideals falls gradually into a state of semi-starvation. Her body is so ill-nourished that the stomach itself becomes feeble and its secretions fail. She is very similar to the ship-wrecked sailor, whose stomach is in such a condition of debility that he has to be forcibly restrained from eating, at the time of rescue, lest, suddenly overtaking his digestive powers, he die during the first few hours of plenty.

Cause and Remedy.

We find a somewhat similar condition of empty stomach in feeble persons who are unable to take much food at a time. They wake in the morning exhausted, and by the time breakfast is ready the labor of dressing has so wearied them that they have only a loathing for their food, limiting the morning meal perhaps to a single cup of coffee, which stimulates but does not feed. In such persons a most remarkable improvement is brought about by recognition of the cause

of the trouble. Let some simple liquid food, such as a glass of milk or a prepared food, be placed at the bedside so that it may be taken on waking without even sitting up in bed, and they come to the breakfast table cheerful and ready for a good meal. A lunch of similar nature between breakfast and dinner, between dinner and supper, and at bedtime, will complete the cure.

The melancholic depression of the aged on waking in the morning and the insomnia of overworked business men are both in some degree due to this same cause, and yield to the same simple remedy. The trouble is that the very simplicity of the remedies for such a condition, which resists drugging, causes the patient to refuse them. Yet a prepared meat food (predigested) will be taken conscientiously, if prescribed by a physician and given as a medicine, when the equally efficient glass of milk is rejected with scorn. Especially in the case of feeble, aged persons is life often saved by the exercise of a little diplomacy of this sort. Under such simple lunches the stomach often regains strength and appetite for more ordinary food.

The Painful Stomach.

The causes of this distressing condition are so various that its full consideration belongs to the physician. The stomach may become sensitive to outside pressure of the hand because of neuralgia in its walls or more often because of accumulations of gas in its cavity from indigestion. The seasick or hysterical person, or any one whose nerves are very much worn out, may have a spot of exquisite sensitiveness at the pit of the stomach, remaining so for a week or more, and rendering even the pressure of the clothes a torture.

Pain in the stomach—as a rather indefinite complaint of childhood—is familiar to mothers, and may be due to cold, yielding to the various warm applications which form such an important factor in our memory of childhood hours. It should be known to every mother, also, that young children are wont to refer to the stomach pain originating in the chest and other distant parts, laying the hand on the pit of the stomach when asked where the trouble is.

Pain, sharp or dull, following repeatedly

the taking of food into the stomach, especially in older children or adults, is a matter concerning which the family physician should be consulted. I do not mean slight discomfort, but actual pain, fixed in the stomach region and coming a few minutes, or even an hour, after the meal.

The Self-Protecting Stomach.

Babies have no valve at the upper entrance of the stomach; and, so, simply run over when they are too full. This beneficent arrangement prevents them from being drowned with the liquid nourishment furnished by over-healthy or over-solicitous mothers, who are greatly alarmed when this life-preserving apparatus is first brought into play by the infant.

This power is lost by the time we reach adult life—very unfortunately in some cases—and the relief of the stomach in most grown persons is accompanied by agonizing pain. Some individuals preserve an infantile facility of emesis, and can get rid of an offending article of food without any discomfort whatever. Intelligent adults learn

to be careful as to what they put into their stomachs; and only in rare instances does the stomach have to act as sentinel and eject an offending article. Unintelligent adults and children eat anything that comes along, and in these persons the stomach's intelligence is continually put to the test. If the stomach, too, is unintelligent and passes unwholesome things on to the bowels, life is in constant danger from the bowel disease or septic poisonings; unless, with severe colic or acute diarrhœa, the system rids itself of the objectionable thing.

In the careless adult the stomach has a right hard time of it. Masses of food half chewed are bolted down the gullet, and liquids of the most unwholesome sort are sent to mingle with them. Sometimes the stomach suffers in silence, and allows chronic disease of blood vessels and kidneys to result. Sometimes it rebels and fumes, much to the astonishment and pain of the owner; who either learns through repeated discomforts to listen to the protest, or settles down into chronic indigestion, receiving daily the visits of some famous specialist and sympathy of solicitous relatives.

The Hurrying Stomach.

There is a very curious condition, sometimes observed, in which the stomach does not retain the food long enough, but quickly passes it on into the bowels. The patient in these cases may have an evacuation, immediately after each meal, of food materials which have only recently been taken into the stomach. Some of these cases are mistaken for true diarrhœa.

The remedy lies in the eating of solid food which is easy of digestion; in very slow mastication of it; perhaps in a quiet rest on a lounge for a time after eating; and in drugs which render the stomach less excitable. Warm applications to the stomach during meals may help; and any new article of food purchased at about the time the trouble began should be questioned. In children, excessive quantities of cream in the milk taken may have this effect; little cakes of butter being then sometimes formed in the bowels and passed with the stools.

The Acid Stomach.

Digestion in the stomach is accomplished by the gastric juice, which contains pepsin and muriatic acid. Sometimes there is too large a quantity of muriatic acid secreted, and acid dyspepsia results. Sometimes the excess of acid is due to fermentations in the food, which lies a long time undigested in the stomach.

The patient is much distressed by the unwholesome condition of his stomach; and his sufferings are accentuated by the coming up of an acid taste into his throat, or the frequent vomiting of a very sour liquid, mixed with the meal last taken. It is in these states that sufferers so often find temporary relief from soda, soda mint, magnesia and other alkalies which neutralize the acid present.

In cases where the sour taste or acid vomiting is due to unnatural fermentation of the food mild antiseptics are beneficial. In all these cases, however, medical supervision of the remedies is desirable; since all of the agents just referred to are apt to injure the stomach if taken for a long time. There

is no class of cases which taxes the resources of the practitioner, and disturbs the peace of mind of the patient, more than these acid dyspepsias.

The Bitter Stomach.

A bitter taste in the mouth is well known to the laity as a symptom of "biliousness" and when it is present a number of domestic remedies for disordered liver are at once brought into use. In some cases the back flow of bile into the stomach is so great, from some stoppage in its onward flow down the intestines, that the stomach is a great bile pool, the emptying of which at intervals by vomiting, renders all efforts at feeding and all ordinary drug medication quite hopeless, until the bile can be turned again downward. These are cases which give the physician considerable anxiety, on account of the extreme difficulty of opening the way again through the digestive canal and because in rare instances there is an obstruction of the bowels which can only be relieved by surgical procedures.

In olden days, when some of the best

modern remedies had not been discovered, the physicians had recourse in such cases to tremendous doses of calomel, bleeding, blistering and severe emetics, along with other measures powerful for evil as well as good.

Pharmacy has now greatly reduced the bulk of many strong but disagreeable remedies; and the high injection tube in the hands of the trained nurse often does wonders. Gradually the rejected agents of the ancients, too, are receiving a new trial and, carefully guarded, are taking a high place again in appropriate crises. The old-time doctors were as good observers and as skillful physicians as their successors, only their resources were much more limited than ours and the name of a great teacher would be sufficient to force the lesser physicians into the adoption of his false, as well as his true, methods.

Testing New Remedies.

Nowadays almost every town of any size has its colleges and its medical journal, with professors and editors who feel themselves competent to dispute the value of any new

method, no matter who proposes it. We have fads, more or less deadly, cropping up every year, and they are quickly backed by great names and elaborate statistics of cure; but before a year is out they are riddled with criticisms by independent observers and writers. By the end of a second year they have been pretty well weighed; and if they survive a third year they are generally by that time relegated to the quack. The great danger nowadays is not that new fads will last, but that remedies of pre-eminent value may be lost sight of in the host of less valuable new remedies, or that the art of effectively using them, in which older physicians took justifiable pride, may be lost in the accumulation of scientific details which threaten to make the modern medical graduate highly cultured but ill fitted for actual practice.

It is a comfort to know, anyhow, that the bitter stomach has always, as a rule, yielded quickly to simple remedies, whether because it is self-curing, or because it depends on less deep seated causes than most other "stomach disorders." The relief of "bilious sick headaches" is largely secured by the

patient's own efforts, with perhaps some prescription received years ago from the doctor. Possibly the old-fashioned spring clearing out, so dear to our grandmothers, may before long be introduced with a flourish by some popular professor; much no doubt to the improvement of livers whose Lenten respite is passing into innocuous desuetude.

The Windy Stomach.

The decomposition of food in the stomach which takes place in many cases of dyspepsia is often accompanied by the formation of gases. These gases first inflate the stomach itself, and then escape by its orifices. If at the same time a similar process is going on in the bowels, the condition of a feeble patient may become extremely dangerous. The heart is pressed upon by the upward rising of the stomach; and in weak people (as in persons suffering from debilitating fevers, in those with heart disease and in the aged) great pain in the heart region, shortness of breath, blueness of the face and other alarming symptoms may result.

Sense of Discomfort.

In less severe cases, great discomfort arises from this form of indigestion. There is a sense of overstretching of the abdomen, of overfulness of the body, often a miserable, low-toned pain, and ineffectual efforts to belch, and in addition to this, there is frequently an extreme depression of spirits, a despondency, a resentfulness of interference, an indisposition to exertion of body or mind, which, taken together, present an almost hopeless barrier to those who would give sympathy, aid or advice. Only those who have so suffered can appreciate the forlornness and irritability attendant on flatulent dyspepsia.

Mental Depression.

The patient finds his brightest days suddenly overclouded, and resigns himself accordingly to despondency concerning everything in this world and the next. Hope is suddenly wiped out from his life; his business is a failure; his health unequal to meet the present and coming strains of life;

his faith was all a mistake; there is no use struggling. Cheering suggestions from friends, the comforting of wife and children, the consolations of religion he does not deny to be genuine; but they do not apply to his case, which is unique and hopeless. The self-healing wrought in time by the body itself, or the more rapid agency of a judicious medicine, will quickly chase away the clouds and bring the sun again. Business again has fair prospect of success, physical vigor returns, faith regains the ascendancy.

After considerable experience of these sudden dyspeptic glooms, the patient of naturally strong judgment and self-control learns to discount them. When he feels them upon him he puts off all calculations and plannings which demand hopefulness; he turns his attention to lighter and more diverting labors or recreations, and is content to wait until the time when medicines or other healing agents shall have dispelled the clouds. And, if he be very wise, he will be very careful during these depressed states concerning his dealings with his fellow men. He will minimize by silence the depressing

influence which he has upon them, will assume a pleasant demeanor which he does not for the present feel; and will especially guard against going about "with a chip on his shoulder," taking offense at words and actions of his associates which, on a brighter day, he would pass off with a laugh or ignore as insignificant.

Sleeplessness and Nervous Disturbances.

Sleeplessness is very often based upon this flatulence, as is proven by the fact that a slight moving of the wind in the pit of the stomach is familiar to these patients as the herald of the blessed sleep. Immediately, when they feel this stomach movement they settle themselves comfortably and know that they shall have rest at last. It is probable that the familiar "running of the mind upon some particular theme," and the inability to switch it off that theme, is in many cases the result of a flatulence which is so moderate that it is unsuspected.

In nervous girls flatulence of stomach and bowels is sometimes at the bottom of the "spells," when they wake suddenly with a

sense of impending death and perhaps scream out in terror. In fact, the observing physicians of older days were accustomed to speak of hypochondria and melancholy spells (and particularly the morbid goings on of hysterical women) as "the vapors"; showing clearly their belief in the subtle yet powerful influence of flatulence upon the mind and nerves.

Just how this influence upon the nervous centers is produced is a matter of doubt. It seems that the mere distention of the stomach or bowel by gas is itself capable of producing mental depression. It is possible that particular gases irritate in a particular way. It is worthy of note, in this connection, that very many trusted sleep remedies are either purgative or antiseptics, or at any rate remove flatus. The treatment of insomnia that ignores dietary precautions and stomach comfort is sadly defective.

The Enlarged Stomach.

The consideration of this state naturally follows upon the discussion of windiness of stomach, for the two conditions are often

associated in the same patient. It may result in several ways, and from various causes. The outlet of the stomach into the bowel may be narrowed, either by disease of the stomach walls at this point, or by pressure from without. Such cases are little influenced by anything the patient may do, and belong to the care of the physician.

There is, however, another variety of stomach enlargement the progress of which may be greatly hindered (which may even be cured) by precautions on the part of the patient. This variety of enlargement is due to inability of the stomach to digest and pass on the things which are put into it.

Causes of Enlargement.

The stomach may be too weak to do its ordinary work; or the work expected of it by the patient may be unreasonably great. The beer drinker who prides himself on the number of glasses he can drink and the frequency with which he can repeat his draughts; the gluttonous man who perhaps is a diabetic; the insane man who swallows quantities of indigestible substances—these

are all likely to acquire dilated stomachs. The dyspeptic whose food lies in the stomach and forms gases instead of properly digesting has after a time more or less increase in the capacity of the stomach, which in turn increases his dyspepsia.

The person who is enfeebled by long and wasting fever, or other disease has of necessity a weakening of the muscular walls of the stomach; and unless great care is exercised in supplying only moderate quantities of easily digestible substances, will be affected with dilatation. Such facts justify that careful oversight of convalescence from grave illnesses which the best physicians are accustomed to give, and which is sometimes resented as unnecessary by ignorant people.

Dilatation of the Stomach in Children.

One of the most frequent and most harmful forms of dilatation is that seen in the infant whom a cruel fate, or occasionally parental selfishness, has deprived of his natural nourishment at the breast. Compelled to take into his stomach daily large quanti-

ties of cow's milk, patent foods, starchy substances, etc., which his stomach digests with difficulty, he gradually has added to his other tortures an enormously enlarged stomach, the little head and limbs in the worst cases becoming like slender attachments to the great abdomen. Lack of sunlight and fresh air complete the deformity, which lingers throughout life, or at least long enough to ensure defective development of the whole body. The writer is so deeply impressed with the untold tortures of infants under such conditions that he would gladly seize this opportunity to speak on their behalf. If the father or mother felt a tithe of the agony which improperly fed infants are called to endure, a single day or night's experience would lead them to summon every doctor within reach; but when the infant suffers it—"oh, that is just the fourteen-weeks colic"! and some one proceeds to jolt it or scold it out of the baby. If the "woman's rights" movement is a humane one it should give us eventually a race of healthy robust mothers—the baby's rights.

The Atrophied Stomach.

This is the final outcome of many grave forms of stomach indigestion. The glands of the stomach dwindle away; the gastric juice becomes less and less abundant; and all that can be done is to feed the patient on the very simplest foods—often predigested—which may be more or less perfectly managed by the remaining glands of the stomach and by the bowel below. Even then he need not despair, as he is not as badly off as the man whose stomach the surgeons have quite removed, and life even under these latter circumstances may be worth living. The great thing is to take these atrophic patients under good care before the atrophy has proceeded very far, and to save the stomach as much as possible.

The Craving Stomach.

There are some queer things in the history of the stomach well worth writing up. There is the dyspeptic school girl, ill-nourished, overstrained in her nervous system, at the very time when she ought to have her

strength saved for the "putting on of womanhood"—what erratic fancies she will take, for chalk, pickles, starch, clay and the like! And if she develops hysteria there is nothing too repulsive for her to swallow! Then there is the mother whose family is on the increase. Her wild longings for indigestible things are proverbial. And we might mention the itinerant freak, who really seems to enjoy chewing soft-edged glass, and swallowing as dessert penknives, chains, etc. For a quarter, some will make a meal of live frogs or spruce boughs.

The Easily Poisoned Stomach.

"What is one man's meat, is another man's poison," is a popular saying, which applies fully to the stomach. "Doctor, will bananas agree with me?" That is a question no man can answer until it is practically tested. A grown man may be brought into agony by even a single banana and a little child may eat several in one day, and thrive thereon. Shell fish, strawberries, quinine and many other substances punish certain people every time they swallow

them. A physician of great experience informed the writer that he severely salivated a lady with a single grain of bicarbonate of soda during one of her illnesses.

These idiosyncrasies, as the doctors call them, must be reckoned with, as they cannot be overcome. They are not to be confounded with mere notions, based on false reasoning, of ignorant patients whose whims the doctor has frequently to meet and circumvent at his visits. Even the shrewd housekeeper in some homes knows that the man of the family who is nauseated by chicken will eat it with impunity if he thinks it is a small turkey—she serves it to him as turkey, and holds her peace.

The Nervous Stomach.

There are some cases in which apparent stomach disease is really a nervous disorder. Such is the so-called "vomiting" of the hysteric or neurasthenic, in which the food is brought back from the lower gullet before it has even entered the stomach. A little persuasion or diplomacy, or a soothing tablet, will often convince the patient that food

can be taken. One of the writer's patients appointed an hour next day when she would again be able to swallow, and had thenceforth no difficulty.

Disturbances Due to Whooping Cough.

In whooping cough especially is an understanding of the nervous origin of the frequent vomiting necessary. The stomach is all right, although it is emptied hourly at each paroxysm of coughing. As the disease is self-limited, and nourishment is of the highest importance, the wise mother feeds the child immediately after each vomiting with a full nutritious meal; so that as much digestion as possible may be secured before the next paroxysm.

Curious Manifestation of Nervous Stomach Disturbances.

The writer had once a case in which the importance of the nervous element in indigestion was very strikingly shown. A boy of fourteen years had given him by his fond mother, during convalescence from influ-

enza, a large banana, which he ate voraciously. Being called in haste, I was much surprised to find my convalescent tossing about the bed in wild paroxysms of pain. I could soothe him to sleep with opiates; but he would suddenly awake and begin his howling again, now clapping his hands on his stomach, and again wanting the back of his shoulders rubbed for the pain. In the midst of a tossing spell he would suddenly nestle down in quiet sleep, only to start up howling again. I say "howling" advisedly; for even his sympathetic and anxious mother could not help laughing at the noises in which he expressed his sufferings. For two nights and part of three days this went on—the patient digesting his milk and liquid food thoroughly, as shown in his stools. It is needless to say that the doctor was at his wits' end, until, on the third day of the "hysterics," the patient vomited some yellow masses, which at first I thought to be bile-stained milk curds. Under my microscope, however, they showed vegetable fibre. Knowing that I had ordered simple non-vegetable diet only, I cross-questioned the mother, and she confessed to the banana.

The stomach had partly digested it, and the howling pain attacks seem to have been due to its forcing from time to time the half-digested mass against a stomach orifice very sensitive from influenza. Not being able to get through into the bowel, the mass retreated for a time into the stomach, giving complete relief and a sleeping time to the patient; until it was forced downward again. After the banana was all vomited, the boy became a quiet, sensible patient again, and went on into full convalescence.

This incident shows well, also, the surprising fact that the stomach can retain in its cavity partly digested or indigestible food, while it allows other portions of its contents to pass on into the bowel; and it suggests that the curious antics of hysterical patients may be due in many cases to hard food masses striving to get past over sensitive places in the bowel tract. Probably accumulations of wind in the bowl irritate in the same way sensitive parts of its wall, as they roll from place to place.

CHAPTER IV.

DISEASES ASSOCIATED WITH INDIGESTION.

The body is a unit, not an aggregation of independent members. "There are many members, yet but one body. And the eye cannot say unto the hand, 'I have no need of thee'; nor again the head to the feet, 'I have no need of you.' Nay, much more, those members of the body, which seem to be more feeble, are necessary. And if one member suffer, all the members suffer with it." This observation, written down nearly two thousand years ago, is still true; and is the foundation of the general physician's claim to survival in these days of luxuriant specialism. Surely, then, if the stomach, that great commissariat organ of the body, is sick, the other members must suffer.

The body presents to the outside world, diagrammatically speaking, three great surfaces—the skin, which is practically non-absorbing; the respiratory tract, which takes in mainly gaseous oxygen; and the digestive

tract, from which all of the body supplies are taken. Nearly all the food taken into the mouth is day by day changed into a liquid condition, and absorbed by the digestive surfaces into the blood vessels; a steady stream being poured by the so-called lacteal vessels into the veins near the neck. If digestion is imperfect, or if the food becomes in any way tainted, poisonous substances are absorbed along with the nourishing fluid, and poured with it into the veins. The blood becomes correspondingly impure, and every portion of the body becomes more or less disturbed in its health and activities.

Effects of Impure Blood.

If the poisoning is moderate and prolonged, the walls of the bloodvessels all over the body become diseased. Of this the clubman, who, though never drunk or forgetful of his manners, yet daily poisons his blood with considerable doses of strong alcoholic beverages, is a good example.

If the poisoning, of whatever sort it be, is more intense than that just considered,

the nervous system will probably show its evil influence. The dyspeptic becomes somewhat sleepless, his temper is uncertain, he loses his natural cheerfulness. Then comes headache or aching in other parts of the body. The skin, too, having its circulation ill regulated by the disordered skin nerves, flushes and chills without any obvious reason. What else can you expect if the nerve cells are continually fed on tainted blood?

Damage to the Kidneys.

Last of all, the kidneys, through which the liquid wastes of the body are carried out, become distressed by the irritating substances which filter through them from the impure blood. The kidney tissue is damaged, materials which ought to escape daily through these organs are dammed back on the blood, and symptoms of kidney failure are added to those already present.

It is true, too, that stomach disorder is usually associated with imperfect action of the lower parts of the bowel tract; so we have often sluggishness of bowel action

caused by the stomach dyspepsia above it. The patient becomes a slave to aperient medicines, and, if the stomach is not set right, continues to take aperient drugs for the rest of life.

Dyspepsia Sometimes a Blessing in Disguise.

Vice-versa, indigestion of stomach may be the result (not always the cause) of diseases in distant parts of the body. Among the things for which thanks should be given, few people include their minor illnesses. Yet the physician well knows that many of the short illnesses from which we suffer are blessings in disguise. Among these blessings at times comes a dyspepsia. The business man who "cannot possibly take an annual holiday," and who "is obliged to take his accounts home with him to finish at midnight," is seized with weakness of the stomach. He loses appetite; he becomes stupid after meals, and unable to fix his mind on his work; he gets frightened and goes to the doctor, who doses him perhaps with nerve medicines that render work still

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more difficult, and finally persuades him to "knock off" and go to the seaside for a week. Dyspepsia has perhaps saved his over-wrought brain from permanent injury.

The working girl who is perhaps doing extra tasks of a trying nature at night, finds her stomach failing. She is reduced to a diet too scant for the support of her strength, and finds that, when she has walked to her working place, she has to lie down and rest before beginning the day's toil. She becomes alarmed and goes to a physician, who by timely care saves her from pelvic disease and perhaps from the operating hospital in which the neglected working-girl's dyspepsia so often ends.

"Nervous Prostration."

A college girl, the pride of unintelligent parents, is permitted to take the work of two college years in one year. She becomes dyspeptic, but thinks it lack of earnestness, and struggles on. Presently "nervous prostration" sets in, or, if this is not sufficient to stop her, a low-toned bronchitis eventually puts her to bed. Probably every year in a

large college for girls yields many such patients. A careful attention to the initial stomach failure by a competent doctor would save to the community many of its brightest and most useful lives.

Happy is the person who has a weak spot which gives warning of danger; happy the person who knows what this weak organ's remonstrances mean, and respects them in time.

Herein lies the evil of quackery and narrow-minded specialism, that the warnings of the weak organ are mistaken for the real disease; the sympathetic complaints of a practically healthy organ being met by minute and lavish treatment, while the silent disease in a distant part, or the general breakdown of vital forces which is at the bottom of the trouble, goes on too long unheeded.

The general physician, who makes the body as a whole, as an entity, his special study will never be driven from the community, but will always be the trusted adviser of careful citizens, and hold the confidence of the broad-minded specialist. "For there are many members; but one body."

CHAPTER V.

THE CAUSES OF INDIGESTION.

Some men are born to dyspepsia, some acquire it, and some have it thrust upon them. Man's physical destiny is undoubtedly to some degree determined before he is born. There are families in which the gouty indigestions, for instance, are handed down from generation to generation. Undoubtedly future years will see, also, more attention paid by the physician and the public to the comfort and freedom from anxiety of young mothers, and to their maintenance in good health; so that their children may have the best possible start in life.

It is probable, then, that some children are born with digestive organs imperfectly adapted to their coming duties. The stomachs are built of bad material, equipped with ill-developed digestive glands, and governed by ill-regulated nerve centres.

Inherited and Acquired Feebleness of Digestion.

However this may be, the child has abundant opportunities to acquire feebleness of digestion before it has gone far upon its way of life. Even if it is nursed by its mother, the nourishment furnished may be (while seemingly sufficient) really very ill-suited to the support of the child. It may be deficient in quantity, causing slow starvation in spite of the loving care of the mother. It may lack nutritive elements, likewise producing starvation. It may be so affected by the nervous instability of an over-sensitive, worrying mother that the child's digestion is quite upset by it. Too frequent meals, also, will try the strength of any infant's stomach.

The Mistakes Made by Mothers.

Perhaps the most frequent cause of dyspepsia in sucklings is the repeated chilling to which they are subjected by otherwise intelligent nurses and mothers. Some full-blooded, vigorous infants will enjoy the

long exposure which they undergo during the daily bath, and the skin reacts warmly to the lowered temperature. It is certain that feeble infants, and infants of certain sensitive temperaments, are daily injured in bathing, the blood being driven from the surface and dammed up in the digestive organs. The sensitive adult knows that five minutes exposure to chill will throw his digestion out of gear for days; but it is almost impossible to convince a monthly nurse that, when a baby is left naked for ten or twenty minutes, until its feet and arms are cold and its surface is blue, it is receiving any damage at all. She takes this as a matter of course, and proceeds slowly to restore the circulation by methods which cannot restore warmth and equable circulation for perhaps ten or fifteen minutes longer. One mother informed the writer that her tiny infant had inherited cold hands and feet from herself. She had always had them, so they were natural to the child, and she resented any interference with this family trait.

There are very careful mothers, too, who will take a feeble infant from the warm breast where it has been cosy for twenty

minutes, put aside the warm shawl which was over its little body, and lay it to sleep on quilts or pillows which are at a much lower temperature.

The Causes of Colic.

The writer, after protesting once on such an occasion against thus laying the child to sleep on comparatively cold things, took the pillow and placed it behind the mother's back. After five minutes she had the grace to remark "Doctor, it *was* cold!" This simple reform was at the bottom of a rapid convalescence from colic and screaming which had lasted a week, baffling all the mother's curative resources.

If the breast-fed child has such vicissitudes, what shall be said of the poor little being who is bottle-fed? If he is feeble, he is, in some instances, always cold, from birth on. He cannot warm himself lying on the breast, as sucklings do. He may be bathed till he is blue with cold; then laid down perhaps on a cold pillow, with cold things wrapped about him; and be comforted by having a tepid bottle which

soon loses its warmth thrust into his mouth. What wonder that the "fourteen-weeks' colic" has become an established institution in babyland, and "soothing syrup" a nursery necessity.

The writer has several times been called to babies whose gastric anguish had baffled the skill of the young physicians in charge, and he has been almost ashamed to inform them that what the baby most needed was a hot-water bottle to its stomach while it was feeding. Only the successful issue rescued the consultant from professional disgrace.

Applied Common Sense.

Babies are simple little anatomies, and the remedies they need are very simple if we only can find just what remedy is the proper one. The physician who is intent on great scientific achievements will overshoot the little one's needs almost every time. The practice of a specialist in infants' diseases is very largely applied common sense—nothing more, but nothing less, with a foundation of genuine love for the little

being who would be so good if only he could be comfortable.

A first-class mother, sound in her health, of well-developed physique, fond of babies, and restful in her nerves, is the best safeguard against indigestion in the infant. How to find a substitute for such a mother is the great digestive problem with which children's physicians are wrestling. We have tried goat's milk, asses' milk, cow's milk; we have diluted, boiled, Pasteurized, peptonized, pancreatized, condensed, evaporated, modified; we have mixed with arrow-root, desiccated grain, dried fruit, bone-dust! And baby has sorrowfully wrestled with our products. We await the day when woman herself shall take up the problem, and give us a race of mothers whose education shall banish dyspepsia from the nursery. The art of medicine is not at fault in this matter; the fault lies elsewhere. Woman must confess it, and woman must correct it.

CHAPTER VI.

FOOD FOR BABIES.

There is no more interesting page in the progress of medicine than that which deals with the efforts of physicians to overcome the difficulty of providing a digestible food supply to the young infant whose mother has failed in her maternal duty. Cow's milk is the only practicable substitute for the infant's normal food in most cases. But if given undiluted, at least to very young infants, it is not well tolerated by the sensitive stomach. Its curds are too large and too tough to be easily digested. They lie a long time in the stomach, like the banana before mentioned, and, unless thrown up, cause the most excruciating paroxysms of pain, producing great quantities of gas which over-distends and enfeebles the stomach walls. The screams of the little patient under these digestive tortures are ascribed by the mother to "badness," and

too often peace is restored to the household by drugging the infant to stupor.

The "Good" Baby.

The fact is that babies are naturally good. They are inclined to go quietly to sleep after their hunger is relieved and to sleep until the next meal hour; with short waking intervals, when they exercise their little limbs by calisthenic movements, or indulge in the international expression of thought called "cooing." A baby's life should be a delight to its mother; if it is a care, a distress, a vexation, the fault does not lie with the baby. It is with the mother's management or with the food in nearly all cases.

Very many devices have been tried for making cow's milk wholesome. They may be grouped under a few simple heads.

Proper Dilution of Milk.

First, the dilution of the milk, to lessen the proportionate amount of curd present; and the addition of some gummy nutritious substance which may prevent the formation

of large tough curds. For these purposes limewater, barley water, toasted cracker dust, the core of a "flour ball," gelatine, desiccated grain, and the like, have been employed, often with great benefit.

Predigested Milk.

Second, the partial predigestion of the milk, so that the curds are presented to the infant's stomach in a form easy of transformation into soluble nutrient material. For this purpose several substances are employed, among them pepsin and pancreatin. The milk may be heated by the mother, after addition of these digestives, and rendered in many cases very much more wholesome for the infant. The objection to this domestic modification is the time required and the skill necessary to hit upon the exact point of preparation when over-digestion with its attendant bitterness is just about to set in. In order to obviate these difficulties, some firms have put upon the market a number of malted foods, in which the digestion has already been carefully performed at the factory. We have

malted foods of milk and grain, and malted foods without milk.

Pure Milk.

A third line of endeavor in the solution of the infant feeding problem is devoted to securing a pure milk, the simple dilution of which may make a food wholesome for the child. For this purpose milk from selected herds, carefully safeguarded against contamination in its handling, is evaporated to a form convenient for canning and mixed with enough sugar to prevent fermentation. In this way a pure and easily digestible milk is secured, but it has too much sugar and lacks fat elements. Along the same line is the now fashionable preparation according to prescription furnished by the physician. The price is put high enough to warrant extreme cleanliness in the handling of the milk. Then, by mixture of separator cream with creamless milk and the addition of milk sugar solution, a combination can with sufficient care and observation be hit upon which will agree with most stomachs. Certain objec-

tions have been urged even to this method—that the separator injures the milk, that the recombination is not identical with the original emulsion, and the more obvious criticism that the physician, by lessening the ingredients which are more difficult of digestion may, while he obviates dyspepsia, unintentionally starve the little patient.

Dangers of Artificial Feeding.

It will be seen, therefore, that the problem of infant feeding in the case of a patient with weak stomach is really a very difficult one, beset with many unsuspected pitfalls into which the amateur adviser, and even the careless doctor, may at any time fall. Long use of predigested milk is undesirable, because of the indolence of stomach which it may beget, and of the residues formed in and left after predigestion.

Rickets.

Moreover, there lie in the path of artificial feeding two great and grave diseases, Rickets and Infantile Scurvy. For the for-

mer, malnutrition is not wholly responsible since unwholesome sanitation of the child's home, and lack of sunlight and fresh air, go to make up the disease-total. Rickets is familiar among the very poor; being characterized, among other symptoms, by slowness of teething (delay beyond the 12th month in cutting the first teeth, or very long interruption in their sequence), slowness of closure of the fontanelles, deformed chest, greatly enlarged stomach, and decidedly crooked limbs. (It may be remarked parenthetically, in this place, that all babies can be discovered by over-anxious mothers to have slightly crooked legs in earliest infancy.) The baby with Rickets is often the pride of its mother, being so fat that she thinks it is all right.

Infantile Scurvy.

Infantile Scurvy, unlike Rickets, is often found in the homes of the wealthy. It is scarcely ever met with in children who have a healthy mother with a breast of wholesome milk. Any child fed exclusively or mainly for a long period on factory foods

or foods prepared by long heating (the five-minute heating given by the mother to all cow's milk does not count here) or on a too-limited dietary (as on a single beef preparation) may contract infantile scurvy. The disease is sometimes very deceptive. The child may be very slow in walking or, having walked, it may lose power in its lower limbs. Sometimes it becomes exceedingly sensitive to handling, even the gentlest change in its position causing it to scream with pain. In graver cases the bones of the limbs seem to swell with inflammation, and either hemorrhages or blood stainings of the tissues occur in various parts of the body.

This disease is as yet unrecognized by many physicians, who treat the child for rheumatism, paralysis, rickets, etc., or even operate upon the inflamed limbs. Under a fresher diet, with a teaspoonful of orange juice or more several times daily, the scurvy process (as in old-time ship scurvy) quickly subsides. As other processes, such as rickets, may be mixed in with the scurvy, this treatment should be directed by the physician.

The Duty of Parents and Physicians.

The writer mentions the treatment and diagnosis here, because many a physician has to be driven into a proper study of newly-discovered diseases by the questioning and insistence of well-read, "up-to-date" parents, who will not allow him to resign his guardianship of their children, but yet compel him to keep informed not only on old-time but on modern practice. Physicians, like other men, are liable to become self-satisfied and to be caught napping. It is the duty of those whom they have befriended in time of need, to guard them against these faults; and to make them develop their best powers. The physician whose early labors have surrounded him with a circle of female worshipers who consider him "just lovely," "the best doctor in the world," is very apt to degenerate under such a delusion, to think he "knows it all," to fall into grievous errors of diagnosis.

CHAPTER VII.

Gastric Disturbances in Children.

Among the most mysterious gastric disorders of infants in former generations were the so-called summer diseases—a group of distressing ailments varying in intensity from slight diarrhœa with vomiting, sometimes lasting the whole of the hot season, to the deadly *cholera infantum*, with its uncontrollable nausea and purging, which reduce a strong baby in a single day to a mere shadow of itself. A discussion of these cases would demand many pages. Suffice it to say, that in late years patient scientific study in hospital and laboratory has thrown a flood of light upon these obscure conditions and rescued hosts of infants from death, or that permanent enfeeblement of digestive health which shows itself throughout life, or, at least up to the fortieth year, in deficiency of weight and general thinness which no drug medication or overfeeding can change,

only a small portion of the food eaten being properly absorbed.

Summer diarrhoea and vomiting may be due to various disease conditions, produced by unwholesome sanitation, contaminated drinking water, weather changes, etc. Wise mothers guard against water-infection by boiling the daily supply used by their babies (for babies get thirsty as well as hungry, and their kidneys need plenty of water between meals).

"Catching Cold" a Source of Indigestion.

Weather changes undoubtedly favor the development of indigestions. "Catching cold" is a process in which the blood is driven from the surface and dams up in inward organs, so enfeebling these organs that infections take place in them. *Where* a person "takes cold" is a matter of constitutional tendency. The damming up takes place probably at the weakest inward part of the body. In one person it is the lung that suffers; in another the kidney; in a third the digestive system. There are probably as many "colds" caught in the stomach

and bowels as in the lungs and bronchial tubes. There are many children whose "bilious" and "indigestion" attacks are a great puzzle to their parents, who cannot believe the children are "catching cold" because they never have a cough or a croup.

Apart from such conditions common to all persons, young and old, the summer complaints of infants are now by the best writers set down to a single preventable cause—milk poisoning. The recognition of this fact and of its proper cure is probably the greatest modern advance in pediatrics.

If the infant on a healthy breast diet contracts an indigestion, it is usually mild in its course and yields to drug treatment without change of diet. A little limewater at nursing, a simple aperient, a poultice, a brief trip to the country will quickly restore normal health.

The Treatment of Summer Indigestion.

In bottle-fed babies, on the contrary, the appearance of a summer indigestion is always disquieting. Well-to-do mothers generally meet it by prevention, removing to

the country before extreme heat begins, and staying there till autumn. If summer indigestion has already set in, the physician proceeds at once to change the diet to substances which cannot be contaminated by the milk poisons, and to clear away all the old milk residues from the bowel. When this has been done, and when wholesome digestive secretions have been secured by his drugs, he cautiously begins again on the milk. Ignorant mothers, who insist on giving an occasional bottle of milk to the baby, thwart the doctor and render the disease chronic, if not incurable. Egg-albumin, beef extracts, oatmeal, barley water and the like will nourish the child quite well for a few days or a week; and when they no longer satisfy, the doctor has usually put the digestive tract into good condition. Then condensed milk may be alternated with the egg or beef preparation for a time, until it is evident that the stomach has returned to health.

There is one caution which should be exercised in regard to beef preparations sold in the shops. All such preparations should be as fresh as possible. An original pack-

age is safer in summer than a bottle which has stood on the shelf for some time, opened to the air for occasional sales to customers. An unbroken package from a reliable druggist with a large prescription trade is reasonably safe; especially as many preparations on the market have quite a large percentage of alcohol to preserve them.

By such means the summer complaints of infants have been robbed of much of their terror. If the sale of unclean, adulterated and poisonous milk to the poor of our great cities were stopped by law and police compulsion, the annual summer sacrifice of hundreds of infant lives to the demon of summer diarrhœa would practically cease. The heat exhaustion of the child's nerve centers would still enfeeble its digestion, and permit of disease; but such cases, lacking the extreme deadliness which decayed milk begets, would yield in most cases to simple measures of therapeutics and hygiene now within our reach.

CHAPTER VIII.

TEETH AND INDIGESTION.

In some families it is customary to ascribe all ingestions occurring between (say) the third and twenty-fourth months of life to teething. This theory is an extremely comfortable one, saving neglectful parents much remorse. The fact is that in healthy children, with well-developed jaws, the teeth should make their way to the surface with but little discomfort; probably an itching and full feeling in the gum and a slight nervousness being the normal accompaniments of this physiological process. But not all babies are in a normal state; and so indigestion, pain, great congestion of the gums, even convulsions, are at times directly due to teething.

Lancing of the Gums.

Lancing of the gums, upon which modern science has for a time frowned, is

still in certain cases necessary and at times relieves very distressing symptoms even when the gums do not seem over-congested; the indications for lancing being that the extremely peevish child becomes at once quiet when pressure is made with the finger over the uncomfortable tooth. A clean incision is not very painful if done with a narrow-bladed knife; and is only dangerous in families disposed to excessive bleeding.

Care of the First Teeth.

After the teeth have made their appearance, they are usually sadly neglected, the fact that they will anyhow after the seventh year fall out being taken as an excuse for allowing them to decay without any effort to preserve them. Of recent years it has become the custom to call in the dentist for the children, just as for adults. This must greatly conduce to health; not only in giving the child better mastication, but in prevention of that constant pouring into the stomach of infected mouth-contents which goes on day and night when the teeth are decayed. Moreover, there is reason to

believe that the enlargement of the glands of the neck which occurs in so many children is often caused by decayed teeth. It has apparently been proven that tuberculosis—eventuating in general consumption—has gained access through large neglected cavities in decayed teeth.

CHAPTER IX.

HOW TO EAT.

A certain amount of quietude of mind is necessary to perfect digestion; but the infant is often unable to obtain sufficient quietude either of mind or of body at this time. If the baby has been born into a large circle of admiring relatives and friends, its little life is often so busy that it has no repose of any sort except in midnight hours. If nursing, the mother will at any moment snatch it from the breast to show it to a casual visitor; yet the sudden interruption of a comfortable meal is not considered by adults a pleasant thing. At the numerous clusterings of friends in the home, the baby is expected to perform a series of antics designed for their entertainment. If sleepy or indifferent, it is jolted or poked into doing "stunts," from five to fifteen minutes being devoted to getting a single smile. It has lately dawned upon students of childhood that this must be

very unwholesome for the baby's nervous system, and efforts have been made to induce mothers to give up the custom. The modern rule is to permit the infant to feed quietly and then lay it down to sleep quietly. This is certainly conducive to vigor of digestion and so to wholesome growth.

Importance of Proper Mastication.

It is important that older children should be trained to eat properly. Food should be well masticated and hurried meals should be avoided. A sufficient quantity of food should be taken; and a sufficient number of articles of food should be eaten at each meal.

It stands to reason that children should receive this training at a table apart from their parents, under the charge of a competent nurse. Under such circumstances only is it possible to give them food suitable to the age of each, to insist successfully upon the taking of new articles of diet; to prevent excessive devotion to one particular dish, and those whimsical prejudices against certain wholesome viands which all children

are liable to form. The child will soon recognize authority if it is impartially and firmly exercised from the start, and will submit to the inevitable.

Laying the Foundation of Dyspepsia.

At the family table there are tempting articles unsuitable for the child; there is divided authority; there are pleadings from affectionate adults for exceptions to dietary rules; there are unwise criticisms of food; there are themes of conversation which divert the child from proper and leisurely eating; there are excessive humorings and sudden excessive reproofs. What wonder that in such surroundings, with a mother who herself is at times subject to loss of appetite and queer digestive cravings, the child grows up to dietary anarchy and chronic dyspepsia; with a delicate, thin body and a nervous system keenly on edge! Such a patient is quite beyond the reach of the drugs which are poured into the unhappy stomach; although he can be restored gradually to health if put under the care and authority of a good nurse, and allowed to

eat quietly at a child's table in a reasonable, wholesome way.

Need of Variety in Food.

Not only does the child's body in health need a considerable variety of viands during each day for its perfect and symmetrical development, but during any severe illness life and death may hang upon the patient's ability and willingness to take a variety of nutritious foods; for the favorite foods may be forbidden him by the nature of the disease, or, being given at frequent intervals, may become so distasteful after a time that they must be intermitted. The physician's burden is inexpressibly lightened if the patient during health has been trained to take without question the foods set before him.

The writer would protest against the advice, given in some standard text-books on children's diseases, that medicines should be administered in food. The child has a right to expect that its food will be unadulterated. It may be expected to refuse for life any food which has had nasty things put into it.

CHAPTER X.

NUTRITION IN THE SICK-BED.

The part which starvation plays in the symptomatology of disease-processes has never received full consideration. With illness comes usually loss of appetite; then wasting; then failure of general strength. In many long illnesses starvation is undoubtedly a very large factor in the causation of dangerous complications. It is for this reason that the wisest physicians have always paid very great attention to the feeding of their patients. The induction of vomiting and purging—which was so popular in olden time, although depressing to some patients—yet, if judiciously applied at the outset of fevers to robust persons, undoubtedly put the digestive tract, including the stomach, into a better condition for the reception of the simple liquid foods thereafter carefully given.

Aids to Recovery.

There is no doubt that, nowadays, scientific teachers have to some extent had their attention diverted from the nutrition needs of the patient, thereby losing sight of one of the most powerful aids to recovery. It is probable that this partial starvation of patients during long illnesses has much to do with that continued feebleness of the stomach which makes convalescence after some illnesses so very slow, and causes frequent relapses, which alarm the family and endanger the patient's life. The stomach cannot do its work properly unless its nutrition is kept up, and if, at the height of the disease, starvation is permitted to occur, the stomach may thereby become so crippled that it is unable during the rest of the illness to digest a needful supply of food. As bowel-feeding is usually unsatisfactory and insufficient, the stomach should from the very outset receive most anxious attention, being put by the doctor into the most favorable condition possible, and being regularly supplied at proper intervals with the most nutritious and tempting food.

The best doctor is he whose patient rises from the sickbed in the best nourished condition, with shortest convalescence, and with fewest relapses and complications. He does not pay five-minute visits to seriously ill patients, but takes time to direct when food shall be given, and how much shall be given at a time; to choose the articles in the daily bill of fare; and to see in what condition they are served. Much of this can be done for him by the trained nurse, but even the trained nurse may possess little practical skill in cookery outside of a few articles given in routine hospital practice.

CHAPTER XI.

EARLY HABITS.

As an agency for the development of intense intellectual force, the modern system of school education has good reason for boasting. Whether it has advanced in any degree the physical vigor of our young people is, however, more than doubtful. Sedentary occupations are known to beget digestive disorders in very many adults. In the child they are probably even more injurious. Children, by instinct, seek muscular activity. It seems to be essential to their welfare, to the building of the embryo man or woman within.

As the twig is bent so the tree grows; so is it, likewise, with the child. The intelligent parent sees in the child not only the child, but the child striving to become transformed into the ideal man or woman. To this end are its ceaseless activities directed. There is bone and muscle to form; there are nerve-strands to lay down; there

are organs of nutrition and of future sex-life to mature. Abnormal states of health, which seem insignificant in their bearing upon the happiness of the child, may yet be disastrous in their subtler influence upon the welfare of the adult who is silently building in the child-body.

The Harm of Hurry and Mental Strain.

Who can tell what harm is being done when we take this little growing creature and hurry it through its breakfast, eaten with the worry of lesson-burdens upon the mind; send it off without that morning evacuation which is so essential to the happiness and health of most people; forbid it to obey the calls of nature when they are felt during lesson hours; confine it in close, crowded rooms during the portion of the day when all other young animals are sporting care-free in the sunshine; force the blood into the brain when needed in the digestive centres; and perhaps, compel it to endure foolish and useless final examinations for the discovery of what the teacher,

unless he be particularly foolish, has long ago discovered during the school course.

In private schools these evils are being acknowledged and corrected. In public schools, on the contrary, where the great majority of our children are being prepared for lives of intense physical strain in self-support, these evils are still perpetuated. One of the health officers of Baltimore has within a year stated in a public gathering that, if the city contained cow-stables in as unwholesome a condition as some of the buildings used for public schools here, he would at once order their disuse for cattle. This, in the vaunted twentieth century!

Can it be doubted that the weak stomachs of very many of our working people have been acquired during their education? Is it the wire-edged intellect—all edge and no body—that our people need for the life-and-death struggle in which most of the things learned at school are displaced by the anxious question of daily bread, the worry of making both ends meet, the bearing of children and the endless nerve-strain of the household?

CHAPTER XII.

IMPROPER MEALS.

Among the most fruitful causes of impaired digestion, the deadly cold lunch stands forth as one easily preventable, in theory, yet (as all who have combated it will confess) most difficult to prevent in practice. The chief reason why the factory worker clings to the cold, hasty midday meal seems to be that it does not at first produce its baneful effects. Each young clerk seems to begin wage-earning life with a certain reserve force of youth. It is very much like the experience of our soldiers in the Philippines. For several years the body endures without evident injury the unwholesome arduous life; then danger signals begin to appear; and, unless relief is secured, the man who went out strong and confident is sent home a wreck for life.

So is it with the clerks in our large cities. The indoor life of continued nerve-strain; the long hours of standing, or of sitting in

positions which prevent full respiration; the cold lunch, eaten hurriedly and without pleasure; the heavy evening dinner, perhaps warmed over for the late-comer, taken into a tired stomach; the evening spent without recreation—all these in time tell upon the high-strung American constitution. If a man, the nervous dyspeptic develops; if a woman, nervous dyspepsia is but the prelude to pelvic disorders, which complete the nervous wreck. The young clerk sees these wrecks, listens occasionally to their tale of woe, and calmly goes on to the same end; feeling in the vigor of youth that the facilities offered (if they are offered) by the firm for a comfortable lunch are unnecessary, and merely lead to expense.

CHAPTER XIII.

THE ANALYTICAL METHOD OF TREATMENT.

The treatment of indigestion in the adult may be based either upon a minute scientific and laboratory study of the case or upon simple experience. Of late years a specialty has been created which has for its aim the exact determination of the nature of indigestions and the building of a system of cure upon this basis. With the aid of laboratory experiments upon animals, and of clinical observations of those rare cases among men where the wounded stomach has remained, after healing of the wound-edges, open to view, the condition of the stomach walls and the flow of its secretions from these walls have been carefully studied both in health and in disease.

This method has been reinforced by the invention of very ingenious apparatus for the collection of the digestive juices and of the products of digestion through the gullet. Little buckets have been made which

are swallowed by the patient, and drawn up again by cords attached to them full of the stomach contents.

The Stomach Tube.

A tube of the thickness of one's little finger has been devised which is passed far into the throat with the aid of swallowing efforts on the part of obedient patients, who after a while become so expert that they can pass it themselves into their own stomachs without serious discomfort. By the aid of this tube anything sufficiently liquid can be introduced into or removed from the stomach, as the physician deems desirable.

Very recently a stomach specialist of Baltimore has devised a little bag like the toy balloon, which is swallowed wrapped round a stomach tube, and then blown up till it fills the stomach. Through a channel in its midst a stomach tube is then pushed gently into the bowel beyond the stomach, and the secretions and digestive processes of the important portion of bowel, already referred to

as lying near the liver, may be studied at the leisure of the specialist.

Use of the X-Ray.

Since the discovery of the X-ray, an ingenious method has been devised for studying the churning and other movements of the stomach contents, as compelled forward and around to mix with the digestive juices. To this end the familiar and harmless drug, bismuth, is administered in powder to the patient; and, as it is opaque to the X-ray, it can be watched by the specialist as it is driven hither and thither within the stomach mingled with the food therein contained. Many other clever methods of study are used; but these will suffice to show how much inventive talent has been brought to bear upon the problems of indigestion by the able men who have made it their special field of work.

Having secured access to the stomach contents, the specialist has pursued his study farther with the utmost enthusiasm. When a patient comes to the office—which is fitted up with many contrivances for the facilita-

tion of this study—the specialist first obtains from him a history of the origin and course of the disease up to date, as observed by the patient and the vicissitudes which the unhappy organ at fault has undergone at the hands of various amateur and professional advisers.

Examination of the Stomach.

Having patiently listened to this recital, and made notes of the important parts of it, the specialist proceeds to determine the existing physical state of the stomach. By ocular inspection of the abdominal walls, by skilled touch, and by sundry mysterious tapplings, he attempts to determine its size and location. Then, to be more certain, he may perhaps pump it full of air through the stomach tube; blowing it up till he can by touch or a renewal of the tapplings make out its balloon shape in the midst of the other abdominal contents. Or he may take a seidlitz powder, and administer the two parts of it separately; so that it fizzes inside, instead of outside, the stomach, taking care that the patient does not quite explode.

With patience and careful adjustment of the doses, the resulting abdominal balloon will be quite distinct.

Watching the Stomach Digest.

Having made notes in his book of the result of these studies, he next washes out the stomach thoroughly with a tube, and orders a "test-meal." This is composed of so much meat, so much potato purée, and so much bread, carefully weighed according to directions. Some six or seven hours after this test-meal the patient returns, swallows down again the stomach tube, and has the contents of his stomach emptied out into a dish or flask for investigation. The specialist then places in the stomach juices removed a small piece of albumen, and notes how long it is before it wholly dissolves. He notes also whether the liquid taken from the stomach contains free acids, from the gastric secretion or from faulty digestive processes; also whether portions of the meat of the test meal, or the bread and potato, still remain in the stomach contents.

In this way he learns the digestive power

of the stomach and its ability to move its contents, after a proper time, on into the bowel below. He may likewise make a careful chemical analysis of the materials removed from the stomach, by the abstruse processes of the laboratory, and arrive at a very exact knowledge of the physical conditions of the stomach under treatment. By the aid of the stomach tube he has it within his power to study the digestibility on the part of his patient of any food substance he pleases, and at any period of exposure to digestion.

Cure Based on Analysis.

Upon the basis of these observations and analyses he proceeds to direct the cure of his patient, giving minute orders for the composition of each meal in a scientific manner. From week to week the proportions of meat and vegetable components in the diet are varied according to the results of new analyses of the stomach contents. The residues of meals are, if necessary, "tubed" out before succeeding meals are taken; and the stomach during its resting periods is re-

freshed, disinfected or treated by solutions introduced and siphoned out through the trusty tube.

These special methods of handling the weak stomach have undoubtedly greatly advanced scientific knowledge of digestion, substituting accurate analysis for speculation and inference.

CHAPTER XIV.

OBJECTIONS TO THE ANALYTICAL METHOD.

Before going on to the consideration of the empirical method of study and treatment of stomach disorders, it is desirable that a brief consideration should be presented of the drawbacks to the more scientific and accurate method just described. These drawbacks have reference to the environment of the patient and to those non-physical forces within him which are variously described as the spirit, the emotions, the psychical nature.

Where Other Methods Are Necessary.

With a certain type of wealthy and leisured patients, and with hospital inmates the analytical method is quite successful. For the laboring classes, who cannot spare the necessary time and money, for ignorant people who cannot be expected either to give a correct history of their ailments or to carry

out directions intelligently, and for sensitive patients, who object strenuously both to the emptying of the stomach and even to the swallowing of the tube, the empirical method must be employed.

Moreover, there is always in the treatment of disease an element of uncertainty which cannot be eliminated. Man is not simply a test tube full of germs—so much germicide introduced, so much disease removed—he is a living being, composed of living tissues, which carry on life processes; and as these life processes are too subtle for physical analysis, so the means used for influencing them are liable to uncertainty of action.

The Self-Healing Power.

When perverted, these life processes show a wonderful tendency to return after a time to the normal, and the wisest physician is he who most sincerely confesses this self-healing power of the body. He stands by the body in disease, helping it to right itself by removing hindrances to perfect function, strengthening weak parts of the organism, and placing it under external conditions

which are likely best to promote the harmonious coöperation of all the members; thus treating the whole man as well as the part specially diseased.

Quack Methods.

He who refuses to confess the self-healing tendency of the body is a promoter of quackery; for, if the people are taught that recovery of health is due solely to the skill of the physician, then, when the patient recovers under the ill-treatment of the quack, the natural inference is that it was the skill of the quack's management which healed him. The armament of the quack, by which he has survived in the struggle with the scientifically trained physician, includes frequently a knowledge of some of the simpler conditions under which the body is likely to recover; a confidence that, if sufficient time is secured by the employment of inefficient remedies, self-cure will in many cases occur; and an ability to play upon the stimulating emotions of the mind—hope, expectation of cure, etc.—which promote the healing body processes.

What the Stomach Pump Fails to Do.

The defect of what I have termed the "analytical method" of studying and treating stomach diseases is due to a fact here touched upon: that it does not sufficiently take into consideration the fact that the stomach is but part of a man, of a whole man, and that while he suffers with it, it suffers with him. Unhappiness in one's lot in life may create dyspepsia, as well as dyspepsia create unhappiness; and one's lot in life cannot be changed by the stomach pump.

It is not likely, therefore, that the older "empirical method" of study and treatment of indigestion, with its consideration of the whole man in all his relations to the outside world, will ever be wholly displaced by the more minutely accurate "analytical method."

CHAPTER XV.

THE NERVOUS DYSPEPTIC.

The forms of dyspepsia which result from disease in the stomach itself, or which are associated with disease in its tissues, have already been briefly noticed. It is necessary before going on to the empirical treatment of the weak stomach to consider certain other elements in the make-up of dyspepsia which have not yet been dwelt upon.

"Mental" Dyspepsia.

A brief reference is desirable to that unfortunate class of sufferers whose dyspepsia is in their heads; nervous dyspeptics they are called, though "mental dyspeptics" would better describe them. The unfortunate of this class has nothing anatomically or physiologically wrong with his stomach—at least, nothing radically wrong. It is rather an "easily worried stomach." At times, when his attention is wholly ab-

sorbed with some outside interest his stomach does its work beautifully. As soon as the passing external excitement is over, his dyspepsia comes back.

When his attention is sufficiently diverted he can digest the most difficult things. When the diversion is past, the simplest food will disagree. The specialist who tries the "analytical method" is soon in despair over his erratic symptoms; for the extreme acidity, breaking all ordinary records, of one day is changed to extreme deficiency of acid at the next visit, and the diagnosis has to be shifted around until the case becomes a disgrace to science. From time to time, in the midst of violent disease symptoms, the stomach suddenly appears normal.

Monotonous Occupations as a Cause.

The patient is probably an over-conscientious man, having ideals too high for possible attainment with the life equipment with which he is furnished. He is perhaps doomed to a distasteful occupation which keeps him indoors all the sunshine hours of the day, and he may in addition be plagued

with uncongenial associations. The mind is forced into a daily treadmill of unhappy and unhealthful conditions, which go on and on in an uneventful monotony that would perhaps drive a less robust mind to the insane asylum.

Other Causes.

It may be that the patient is a single woman of strong domestic and social instincts, who is driven by poverty to earning a scanty livelihood by plain sewing, with its indoor confinement, hurried and unwholesome meals and growing tendency to a solitary, unsocial life in a cheap boarding house.

Or the life and temper may have become permanently soured by some supposed or real injustice at the hands of a trusted companion, which adds its sting to pre-existing poverty. The girl who permits her mind to dwell on the details of a broken engagement is thus one of the most unpromising of dyspeptic patients—one whom every doctor would avoid if he could. She is thin, nervous, devoid of appetite, and sleepless.

She breaks away from an affectionate

home-circle, and comes to the great lonely city with the purpose of pursuing some ambitious life calling. She is continually shifting this plan, and continually breaking down with attacks of nausea, headache and indigestion. Medicines have no lasting effect upon her, because the old worry is daily and nightly brought out and caressed.

The Course of Continued Dyspepsia.

The career of such a patient (we shall take the clerk first mentioned as an illustration of the whole class; although each case differs from the others) would be very interesting if it were not so sad. His continual dyspepsia takes away that elasticity of mind and hopefulness of spirit which is essential to the greatest success in business.

He seeks the doctor, and unfolds to him the tale of his gastric woes. The doctor is very hopeful, and gives alkalies, with restriction of diet, and disuse of the tea and coffee which had heretofore been his chief comfort in life. This failing, the doctor tries acids, and further restricts the diet. Digestives, aperients, stomach anodynes, bit-

ters, alcoholic drinks, all are tried, and the patient, now thoroughly discouraged, and cut off from everything at the table that tastes good, is referred to the specialist. The latter pumps his stomach out for several months and tries various special plans of cure until the patient's money is all gone.

The Victim of Quackery.

Half-starved, disheartened, a confirmed misanthrope, he spends his next earnings on a traveling quack, whose advertisement describes the patient's feelings with unflinching realistic skill, and who promises a certain cure. When the quack has moved on to a new sphere of usefulness, leaving the patient among others to whom the certainty of cure somehow did not apply, our unhappy friend resigns himself to the inevitable, and determines that, as he must be cursed with his chronic indigestion, he might as well have a square meal occasionally anyhow.

The Autocrat of the Boarding House.

He seeks a new boarding house, and gradually, by conversing learnedly on food

subjects, becomes the autocrat of the boarding house cuisine. For days he will discourse on the digestibility of the foods offered, giving much advice concerning more wholesome methods of preparing them, and exercising great abstinence and dietetic caution. Then he will suddenly alarm and confound his admiring audience by an enormous meal, in which the most unwholesome things on the table figure most largely. After a night of distress and repentance he begins, with shame-faced distrust, his old career of caution, receiving with humble gratitude the various special delicacies which the landlady has made to tempt his appetite. No one can help loving him, nobody help pitying him. Anger at his excesses melts away before his deep contrition.

A "Wonderful Change."

Suddenly, after a vacation, he returns full of a wonderful diet which had completely cured him. His whole bearing has changed. He is hopeful, full of plans for the future, and advises the adoption of his new dietary method, by which his stomach has been for

some weeks cured, to every one he meets. Unfortunately for its reputation, his happy marriage a few months later to a lady whom he met at the seaside, gives skeptical hearers cause to speculate profoundly on the value of requited love as a cure for dyspepsia.

Dyspepsia in Literature and Religion.

Since the days of Carlyle there has been no need for a treatise on "the dyspeptic in literature." What that son of genius, that champion of the intrinsic nobility of man, would have written if the blight of dyspepsia had not touched his life with acidity, can only be imagined.

The religious dyspeptic helps to populate the insane asylums; he is a curse to many a household, and, is it not too much to say, has done a vast deal of harm in warping and narrowing theology. The rising average of health and vigor in the pulpit gives hope that a more wholesome, yet not less true, type of religion will henceforth be taught by the clergy harking back to the healthy teachings of those Apostles who, after a night of brawny fruitless toil with the seine, were

ready to cast it forth again at the Master's bidding, or to leap overboard and swim to him on the shore. The effeminate apostles represented in medieval art, or the saintly bookworms of later pulpits would have been in collapse long before day dawned on the waters. The teachers of religion should be men, healthy men, if they would lead men to the highest attainments of human living.

The Political Dyspeptic.

In politics, the dyspeptic is an idealist and a pessimist. Things are always going to the bow-wows. Republican government is a failure; all legislatures are hopelessly and totally corrupt; all true and noble patriots, all great statesmen, lived and died in the times we read about in school histories. Good men are so hopelessly in the minority among our citizens that our friend does not even take the trouble to register as a voter. Even the discussion of political subjects angers him, so that he considers it a mark of ill-breeding to mention them in his presence. The city in which he dwells is the worst-

governed in the country, and its trade is all being lost through sheer indolence.

Can it be doubted, after a contemplation of such examples (and the community about us contains many such) that there is direct nerve connection between the stomach and the brain?

CHAPTER XVI.

THE EMPIRICAL METHOD OF TREATMENT.

The first aim of the empirical method of treatment being to bring aid to the feeble stomach in its own struggle for self-healing, the physician begins by searching for the agent or condition which hinders the stomach from recovery of its healthy tone. In a prolonged disorder there is usually a continually acting injurious condition. This may possibly be an infection of the food by decayed teeth, and dental care will then enable the stomach to rally. This view is based not only on the logical certainty that decayed teeth must produce infection of the food, but on the actual fact that such a patient's digestion is observed to improve after thorough dental work has made it possible for the food to enter the stomach uncontaminated. The intelligent dentist considers himself not simply an excavator of decayed dentine, nor a mechanic in metal work, but a guardian of health, on an equal

footing with other medical and surgical specialists. The application of a tooth-brush; the use of dental floss; the long rinsing of the mouth with antiseptic solutions which are driven by the tongue between the teeth until the whole mouth is sweet and clean ensure the health of the repaired teeth.

One of the Causes of Rapid Eating.

Another very frequent cause of weakness of the stomach is the habit of eating rapidly; and this is often associated with bad teeth. It may be due simply to nervousness, or be a habit into which the patient has fallen; but it is often due to the fact that the natural pleasure which healthy people take in holding food in the mouth, moving it about therein, and extracting its juicy parts, is absent; hence all haste is made to enjoy the still-present pleasure which the throat experiences in swallowing.

The Lost Pleasure of Mastication.

If the teeth are decayed and sensitive, or if there are gaps in the sets of teeth above

and below, much of the pleasure of mastication is lost. The food is bolted in larger or smaller masses, because grinding it to a pulp takes too much time or is painful. How much pleasure can be gotten from mastication every healthy person knows who has taken a piece of dry bread into his mouth and slowly extracted its sweetness, a good test, by the way, of the efficiency of one's salivary glands.

Bad Water as a Cause of Dyspepsia.

In all cases of chronic dyspepsia it is well also to look into the water-supply of the household. In all large cities careful persons recognize the danger to digestive health which lurks in contaminated water supplies; and, except in freezing weather—perhaps even then—boil the water which they drink. In summer, physicians find from time to time considerable epidemics of acute dyspepsia, with perhaps "heat-rashes" or fever, which are evidently due to the muddy and ill-smelling water of the city water pipes.

In country districts there is even more

danger from the drinking water; for it is next to impossible to convince the residents that there is harm in the clear, cool water of their pump or spring. Yet a careful test may prove that the water has been contaminated by field or house drainage; or by animal and vegetable substances which have fallen into the well or spring, or accumulated on the old pump-valves.

Need of Caution in City and Country.

It stands to reason that digestive poisons which in their most concentrated forms lead to severe febrile diseases, will, when less concentrated, produce mild indigestion. Those conditions, therefore, of water or milk supply which in some seasons disseminate typhoid fever and dysentery, should receive attention when obscure dyspepsias are prevalent in the home or the community.

This is equally true of the summer hotel or boarding house, which now offers no safeguards whatever in these essentials, but will, with a more perfect education of the public in sanitary matters, doubtless some day be put under the supervision of State

health officers, publishing annually certificates as to the purity of its water, the sanitation of its dairy, and the perfection of its drainage.

Defective house-drainage and plumbing, damp cellars, and undrained houseyards have much to do with obscure forms of indigestion both in country and in city. There are some houses in which nearly all who live for any considerable time become more or less affected with indigestions; while more feeble inmates become chronic sufferers from the same troubles, resisting all medication. This can be overcome to some extent by throwing open the rooms to outside air and sunlight; but, if irremediable, it is best to seek a new home. It is probable that a large part of the benefit which the city dweller receives from his visits to the country or the seaside is due to his escape from unwholesome house air.

The Value of Outdoor Life.

Just now the tendency of medical men is to make their consumptive patients, and all others whose nutrition is imperfect, live

out of doors. Tent life during the summer months; spending several hours every clear day, at other seasons, on some sunny porch, well wrapped up; for those who are stronger, a daily tramp, even in threatening weather—all this will often restore appetite, promote digestion, and enable the body to throw off otherwise hopeless disease.

It is certain that the latest experiment—letting patients sleep out-of-doors the whole year through—would be of immense benefit to them if certain drawbacks and dangers of sudden harm from severe weather changes and storm could be overcome.

The Practice of the Ancients.

This is no new idea, for the people of eastern lands have been for ages accustomed to sleep on the flat roof of their houses under the stars. One has only to refer to the ancient scriptures to learn how large a part the flat battlemented house top played in the lives of the people of old; and how little hardship was thought to be involved in sleeping out-of-doors in gardens or fields—even when there was, as we say, a chill in

the air. Houses then had little furniture, and offered little inducement for lingering inside.

It is very doubtful whether the elaborate equipment of our homes indoors, with all the luxuries to which we have become accustomed has not done harm, by seducing people from a more wholesome open-air life, and given a decided stimulus to dyspepsia and its kindred ailments.

CHAPTER XVII.

THE COOK A DYSPEPSIA ARTIST.

It may truly be said that the cook is a dyspepsia artist. If she is a poor cook she makes the dyspepsias of the poor, if she is a gold-medaled cook she makes the gilt-edged dyspepsias of the rich. In the middle way lies safety, as in so many other things. There is a tendency in some altruistic circles to believe that bad cookery is the great original sin, the progenitor of all others. The effect of this creed is certainly good, in so far as it introduces cookery-training into the public schools.

Dyspepsia and Alcoholism.

Many a wife's weak stomach is a tombstone to her bad cookery; and many a working man drowns his digestive sorrows in alcoholic beverages. Dyspepsia and alcoholism join hands in a vicious circle, which it is almost impossible to break as long as

either holds on. The reformed drunkard's worst enemy is that awful gnawing crave in his stomach which demands the old soothing drug. I have known a man to resist it for days, and finally come to his physician with the statement that he must get relief or drink again, no matter whether his home and business went to wreck or not. A "wet cup" on the stomach region will sometimes marvelously dissipate the crave; at other times suitable saline mixtures will relieve it.

The "Gnawing Crave."

All workers among alcoholic patients know that a dish of hot soup or a wholesome well-cooked meal will often drive away the demon for a season. This gnawing crave returns with any disturbance of stomach or "liver" functions, and is relieved by certain stomach and liver treatments known to all physicians. Strong nerve tonics such as strychnine (carefully administered), and irritants, like capsicum, relieve to some degree this dyspepsia of alcoholics. If a drinker entirely disuses alcohol in every form (perhaps tobacco also)

the dyspepsia is apt greatly to improve, and the stomach may become quite healthy again. If it persists there is always a question whether a little alcohol in some form (perhaps as "bitters") is not still being taken; not enough to satisfy the tiger but enough to keep him awake.

There are persons who drop liquor suddenly under powerful religious or domestic influence and, becoming deeply absorbed in religious or domestic affairs, have no further trouble from the crave; but most men must take care also of their stomachs in future if they would be secure against their old alcoholic foe.

The Gouty Tendency.

Good cookery is not necessarily a panacea for dyspepsia; for the rich may suffer, as much as the poor—sometimes even more than the latter. The elegant and fashionable disease, or group of diseases, called gout is in its essence indigestion (at least in many cases, for lead poisoning is said to have something to do with it at times) being greatly promoted by the rich food and wines

in which many wealthy persons indulge. The gouty tendency, being born in many patients, can seldom if ever be wholly expelled from them; but very much can be done, by simpler living, abstinence from alcoholic drinks, and daily exercise in the open air, to lessen and limit its manifestations.

Apart from the most marked cases of gout, seen in persons who accentuate hereditary tendencies by highly spiced, rich food, by wines, and by indifference to exercise, there must be a great deal of obscure, low-toned gout in persons whose heredity is gouty, but who are themselves temperate and industrious. Such persons suffer year-long from some form of indigestion—excessive acidity, fermentation of food, depressed spirits—the underlying gouty habit of body being unsuspected until, as years go by, the gouty condition very slowly manifests itself in deposits about the small joints, etc.

CHAPTER XVIII.

HOSPITALITY A REMEDY.

Good cheer is an element in perfect digestion which cannot be ignored. It is a great misfortune that the phrase should have become associated with the enjoyment of alcoholic beverages; for the thought expressed is one which needs to be cherished in every household. Under cheerful table-companionship the circulation of blood in the digestive organs becomes quickened, the digestive juices flow more freely, and nutrition is greatly promoted. Laughter and dyspepsia are incompatible. It is well known that the most confirmed dyspeptic improves on a visit to merry friends, and is at their hospitable board able to take with impunity articles of food which at his own table are certain to disagree.

The Charm of Merriment.

The writer, a few autumns ago, had under his care a young woman who presented

a history of nervous dyspepsia and dyspeptic nervousness. Having tried all sorts of remedies in vain, he insisted that she must leave her home and visit a family of friends where there was a combination of young people and merriment. This was reluctantly done, yet was so successful in restoring healthy appetite and digestion that it has since been repeated several times in successive years.

Hospitality is a Christian virtue, much insisted on in the Scriptures; and, like so many other precepts of those wonderful writings, has a bearing upon health as well as upon strictly religious welfare. The old fashioned "open house" was right as long as the hospitality extended was simple and inexpensive. The tendency to make entertainment of guests formal and luxurious banishes from the home one of the greatest adjuvants of digestive health.

"Ministering Angels."

There are many persons in every community who are angels of health to every house they enter, and their visits are to be

encouraged in every way. Under their beneficent presence the mistress of the house may bring forth with certainty of appreciation the simple dainty which she long ago made with her own hands for such an occasion, and begins to take new interest in the irksome task of providing food for her household. The husband and father, too, is reminded of the blessing given to him in the good wife who graces his board, the older children enjoy with double zest the good things set before them because of the brighter conversation, which spontaneously appears when such a guest is present; even the servant girl forgets the accumulating worries which had made her think of getting another place, and decides that it is not such a bad home to live in after all. Simple hospitality is not expensive in the long run, for it repays in these and many other ways the slightly added expenditure.

The Magic of Change of Scene.

Closely associated with this remedy for digestive troubles is change of scene, of climatic conditions. A striking example of

this latter is seen when an infant, exhausted by the heat and poisoned by the impure air of a great brick-paved city, is taken for an afternoon trip on river or harbor. At the very first breaths of the purer air the little stomach, which could retain and digest nothing whatever, begins to work naturally again; and with this reestablishment of nutrition the loss of flesh is checked, the spirits revive, and convalescence is at once established. The same beneficent influence is exerted by a trip to mountain, or even to hill districts. It is experienced likewise by adults and the aged. The agent in this wonderful upbuilding is not wholly the coolness of the air, but to some extent it lies in the change of scene, the entrance upon new atmospheric conditions.

Lessons from the Ancient Hebrews.

Among the remarkable institutions of ancient Hebrew life, none is more worthy of thoughtful consideration by Americans than the great feast-journeys to which the religion of that day obligated the tribes. Three times a year it was the sacred duty of all

the able-bodied men (accompanied, if they pleased, by women of their households) to take their staffs in hand and climb the distant mountain-slopes to the great mountain city, swept every evening by the sea-winds from the west. There they feasted, and shopped and saw many strange sights, and met many travelers from far-off lands.

In these sacred journeys were combined the recreative influences of the modern summer vacation, a trip abroad, and a journey to some great international exposition. An enthusiast on public health could desire no more excellent method of securing for a nation that change of scene which with us, unfortunately, is enjoyed most frequently by those in the community who least need it, but which in that ancient republic was obtained alike by both rich and poor.

CHAPTER XIX.

CHANGE OF DIET.

Variety is not simply (as the old adage has it) the spice of life, it is an absolutely necessary ingredient. This variety should extend to the food eaten. Not only is a mixed diet essential to the full vigor of body and mind—compare the European with the vegetarian rice-eating Oriental—but a daily change in the bill of fare is necessary to the highest attainments of health, especially among persons whose livelihood is too sedentary to put a Spartan edge on appetite.

How to Procure Variety.

This variety may be secured in two ways—by the introduction of new articles of food, or by the presentation of old articles in a new form. If the writer had the preparation of his patients for becoming ornaments to the sickbed (and “how to be a

patient gracefully" would be worthy of a whole lecture by itself) one of the first things he would teach would be the habit of eating many wholesome things. The patient who is willing to try anything offered to him by his nurse is the angel of the sick bed. Who are the demons, one does not like to state; but the nurse whose patient eats only two or three things when well, and those probably difficult of digestion, can throw a flood of light upon the subject.

It is well known to physicians that foods which are distasteful in health may prove very agreeable in sickbed. Thus milk, which is disliked in health, may prove the mainstay of an illness, agreeing remarkably well; but many persons, holding to the old prejudices, will not give it a fair trial. In feeding an invalid with feeble digestion on liquid foods, long continued articles are almost certain to pall; and so the wise doctor changes from one to another at frequent intervals. Thus, soups and broths may be given in the daytime, and cool milk during the night; or milk may be alternated with raw egg-white beaten into "snow," or the patient may be allowed to exercise his jaws

a little on a piece of tender beef, swallowing only the juice; or a dainty treat of calf's foot jelly, tender and clear, may be given at midday.

The Disadvantages of a Monotonous Diet.

In some families, where monotonous meals are served to the sick in cold dishes—soup swimming in cold grease, and service unattractive—the doctor has a very grave task to secure food for his patient. In other families the dainty taste and dietary intelligence of the caretakers lifts half the load of the illness off his shoulders. Only those physicians who give time to the dietary of their patients and occasionally inspect the meal offered can obtain the best results with cases where the stomach is feeble.

In many families the members who are not ill seem to lack wholly the capacity for understanding what is attractive to such an invalid, and here it is that the doctor blesses the advent of the trained nurse. To have at his command one so taught that she can carry out a mere suggestion into all man-

ner of tempting details makes attendance for him, in even a difficult case, a delight. For it is not only the nature of the food offered that tempts the feeble stomach, but the way in which it is presented. Under skilful fingers the same thing assumes a dozen disguises.

How to Serve Dainties.

The more emotional ways of stirring up appetite are likewise to be considered. The patient who revolts at the suggestion that an article of food would be good, will take it if it is suddenly presented in a dainty way; or, if it be positively refused at first, a little affectionate persuasion will after a few appeals secure the trial of "just a little," then just a little more, and presently the patient is surprised at finding the dish empty. Perhaps a dainty delicacy sent in by a neighbor—duly prompted therein by the nurse—may be taken with relish when everything home-made is rejected with loathing. Nothing short of absolute and continued vomiting of food should baffle an expert in dietary matters.

CHAPTER XX.

DIETARY LONGINGS.

The wise physician is ever on the alert to learn new truths from Nature. He therefore gives due respect to the cravings of his patient; for occasionally they indicate the true solution of a very difficult problem. There are cases, as in convalescence from typhoid fever, where the digestive tract has suffered grave injury to its tissues, and where he must be merciless in refusing substances which might bring a fatal relapse.

There are many other cases, however, of great digestive feebleness, where the tissues of the digestive tract are intact, and here he will often do wisely to consult the taste of his patient. He may give the article desired—as when the longing is for a fresh tomato—carefully directing that only the tenderer parts be taken; or, when sour pickles and sour fruits are craved, he may refuse them and give acid mixtures from the drug store. Sometimes the most unex-

pected articles will agree with a sensitive stomach which craves them, and begin a final convalescence.

CHAPTER XXI.

BITTERS AND OTHER VEGETABLE TONICS.

The popular belief that certain bitter vegetable substances improve the digestive power of the weak stomach is confirmed by the experiments of scientific observers, who teach us that all bitter vegetable products promote the flow of the stomach and digestive juices, increase the digestive power, and also stimulate the onward movements of the intestinal canal. With such attributes it is evident that the treatment of the dyspepsias by these bitter substances is an ideal method, the food being better digested, the stomach being restored to its natural tone, and the evacuation of waste products being favored.

The Uses of Strychnia.

There is an impression among the laity that medical men are either ignorant or neglectful of this valuable class of remedies.

This, however, is not true. The profession has culled out from a great host of bitter medicines those that are most generally reliable, and gives these daily in pill, capsule or elixir. Among the bitterest vegetable substances known is strychnia, and this is so popular with physicians that even the laity have come to prescribe it for themselves. Strychnia (a dangerous drug if carelessly used) is not only an ideal bitter, but also a tonic to the muscles and nerves of the whole body.

Next to strychnia in popularity among physicians for certain cases of indigestion come several bitter remedies familiar to the laity. Among these are gentian, the root of a foreign herb related to our well-known blue gentian; calumba, another root-extract; quassia, a bitter wood, sometimes made into cups in which drinking water is left over-night to receive its tonic principles; wild cherry, familiar to all country folk, whose bark makes an excellent infusion for feeble stomachs; and others.

The cinchona bark, with its extract, quinine, is not only a prime bitter tonic, but also a malarial antidote and a fine nerve

tonic. Camomile, and a very great number of bitters which are either inferior to the above in power or less certain to meet the needs of ordinary cases, are kept in our drug stores, at the command of the physician.

New and Old Remedies.

Moreover, the great pharmaceutical manufacturing houses have in every country of the globe agents who are on the look-out for new remedies. Whenever they hear of a plant with a reputation among the natives—civilized or savage—for curative powers in any disease, these agents procure the plant and either forward it to their houses, or send liquid extracts from it, to be tested in hospital and laboratory. A great difficulty is met with in the fact that dried samples of herbs shipped home are often found to have lost the powers for which they were famed in the place of their growth. Only those ignorant of the labors of the modern pharmaceutical expert find temptation in the window of the alleged "Indian herb doctor," with its bunches of herbs dried for no one knows how long.

The Search for New Remedies.

Our late civil war, with its inhuman effort to shut out all medicines from the enemy's country—the Red Cross has come at last—forced those thus denied the aid of medicine to search more closely into the great storehouses of garden, woods, and field for agents hitherto neglected; but although a host of valuable drugs were thus brought into temporary prominence, I do not know of any bitter stomachic then discovered which has been accepted by the world at large as a remedy of the first rank.

The administration by doctors in olden time, of fresh infusions of bitter herbs, must have been better suited to a race of heroic mould than to their effeminate descendants of the present day; but it is somewhat questionable still whether the pint cup or bowlful of "yarb-tea" did not "get there" more thoroughly than the dainty pill of modern pharmacy.

Dangerous "Stomach Bitters."

There is a class of so-called "stomach bitters," sold in the drug stores and elsewhere,

which is very popular on account of the large percentage of alcohol present. The drinking man who desires to deceive his conscience with the pretence that he is taking a digestive tonic, and the reformed drunkard who has taken a pledge not to drink any more alcoholic beverages, find these "tonics" just the thing, and for this, among other reasons, the sale of such "medicinal preparations" is enormous. As our governments have not yet become civilized enough to require a registration of the ingredients of patent medicines, there is no hindrance to the addition of opium and other seductive drugs to these remedies, with which so many citizens treat their chronic indigestion.

CHAPTER XXII.

DIGESTIVES.

If the stomach cannot without difficulty digest sufficiently the food furnished it, there is no reason why we should not endeavor to secure a partial digestion of the food before it is eaten, leaving to the stomach the lighter task of completing a work already well under way. In the effort to attain this end, some very interesting sidelights upon the processes of Nature have been obtained. From the stomach lining of pigs and other animals we find it possible to derive a "pepsin" which, added to foods, will to some extent predigest them. From the pancreatic gland, which secretes a very important digestive juice, we in like manner prepare "pancreatin." Both of these are furnished in very elegant forms by our drug stores for internal administration.

A Lesson from Bird-Life.

From the gizzards of birds a digestive agent is obtained which has recently been

used as an adjuvant to human digestion. The soft white curd-like material which birds regurgitate and put into the wide-open mouths of their new-born nestlings, is, I suppose, a predigested food prepared by the aid of this ingluvín in the gizzard. If so, the inventors of predigested foods for human infants ought to "go way back and sit down," as they have arrived somewhat late upon this terrestrial sphere.

The Use of Vegetable Ferments in Digestion.

It is somewhat surprising to learn that plants possess several digestive substances very like in their action to the juices of the human stomach and upper bowel tract. Thus malting, the familiar process by which beer is produced, is dependent upon the action of a ferment in sprouting grain, and another has been obtained recently by a Japanese scientist from sprouting rice in the manufacture of a liquor popular in Japan. A still more interesting ferment is obtained from the juice of the papaw, a favorite fruit with tropical people. This ferment digests

milk and meat very much as the human stomach does.

The Physician's Use of Digestives.

The above are but a few of the digestive preparations which, in the form of powders, tablets, or liquids, are put upon the market by manufacturing chemists. It is very difficult to estimate their exact value in disturbances of digestion, because each is adapted only to certain conditions of the stomach, and each requires for its best efficiency certain favorable circumstances, as to acidity, etc., which are not always present. The consequence is that, finding the extravagant claims of the makers of the digestive untrue in many cases, the user loses all faith in the efficiency of the agent. The skilful physician, however, having a large experience with dyspepsias, and understanding the principles upon which these digestive adjuvants should work, uses them with considerable success, and values them highly in appropriate cases.

The trouble with digestives is that some stomachs are lazy, and if their work is arti-

ficially done for them beforehand, they after a while learn to expect, and then to demand, it. The careful physician uses digestives gladly for a definite purpose during a limited time, and then discontinues them. In fact, all digestion-crutches should after a while be discarded, and the patient should gradually be led back to the performance of natural functions without any artificial aid.

CHAPTER XXIII.

DIET "CURES."

The most complete form of dieting is that known as fasting. It is probably true that complete abstinence from food will cure some diseases. In those diseases which proceed from excess of eating and drinking from over-irritation of the stomach by too rich or too indigestible food, one would expect an improvement during a short fast. The loss of excessive fat which is known to accompany fasting would itself improve the functions of many patients. Fasting, even in the insignificant degrees observed in fashionable circles as a religious duty, is to many persons decidedly injurious. The omission of the customary morning meal brings with certainty a miserable headache before dinner time; or the general disarrangement of the internal economy may be made known by an abominable irritability of temper.

Extreme hunger, as experienced in ship-

wreck, or in abandoned arctic settlements, appears in some persons to develop the latent brutal instincts terminating in murder and cannibalism. Self comes uppermost, and delicate consideration of neighborly duties is forgotten. The exact value of fasting in the promotion of man's higher aspirations is therefore a matter of considerable uncertainty.

The Value of Dieting.

Dieting is partial fasting. The patient suffering from one of the many forms of indigestion is usually compelled to adopt it in some degree, as certain articles of food punish him always very severely. The question is, To what extent ought he to carry his abstinence? and this is indeed a very grave question if his stomach resents food which is essential to full nutrition of his body. The tolerance of the dyspeptic stomach for foods varies so greatly from day to day, and that usually meek organ is in some persons so whimsical and tyrannical, that one ought to be extremely cautious in heeding its demands.

Restriction, Not Starvation.

Many physicians of excellent standing are accustomed to restrict the diet of a very large percentage of their patients, and some of these patients follow the injunction implicitly until ordered back on full fare. In the case of such an obedient patient, if the doctor forgets what he has cut off, and at a subsequent visit cuts off other articles, it is quite possible that the patient may enter on actual starvation. The same may occur if the patient tries to follow the orders of two successive doctors conscientiously, one of whom perhaps has cut off all meats, and the other most of the vegetables. For doctors have hobbies just like other folk, and each swears that his own hobby horse is the only steed worth riding. I have known several cases of this professional starvation.

If the patient tries to "diet himself" there is no knowing where he may end; for a morbidly sick man driving a whimsical stomach may easily go on to destruction. I have known of one lady who, on her death bed, left a solemn injunction with her young friend, "My dear, whatever you do, don't

tion: "It has been the ruin of me." For a limited time, under control of some one whose judgment is unclouded by ill-health—who does not own the particular stomach under discipline—being is often of very great value in restoring digestive health.

CHAPTER XXIV.

THE MILK CURE.

At various times physicians have risen to world-wide reputation by advocating and carrying out certain restrictive forms of diet. Sometimes a single very nutritious article of food has been chosen, and the patient restricted rigidly to it for a considerable time.

Among such articles milk is naturally the first to suggest itself. It is our exclusive food in early infancy and therefore possesses all the elements necessary to supply the body requirements. Furthermore, it is readily obtained, pleasant to the taste, and cheap. Under favorable circumstances it may be taken without any other food or drink for several weeks. This diet sometimes works very remarkable improvement in obstinate stomach disturbances of various sorts, mild and grave.

Unpleasant Accompaniments of the Milk Cure.

In most cases of exclusive milk diet the patient takes it with pleasure at first, but after some days becomes tired of it, and needs much urging to continue. The patient feels empty; gets a disagreeable taste in his mouth; and, if he has been taken off an abundant mixed diet, loses weight for a time. Some persons feel so weak that they prefer to stay quiet; some have dizziness at times, which may gradually become more intense and make a failure of the method by compelling a premature return to other food.

As milk requires about three hours for digestion, that is chosen as the interval between the milk-meals at the start, the quantity taken being about four ounces. When the patient gets somewhat used to his diet a larger quantity—say a pint—is given four times a day. Sometimes fresh milk is used; sometimes skimmed. It may be given warm, or boiled. City milk requires about five per cent. of limewater in all cases; and sometimes a larger percentage is used at the beginning.

Weir Mitchell's Method.

Weir Mitchell's method of carrying out the milk cure is to give it alone for twenty-one days; in such quantity, after the first week, as will prevent loss of body weight. On the twenty-second day a thin slice of stale white bread is added, three times a day. At the end of the fourth week, two table-spoonfuls of rice are added, once a day; with perhaps a little arrow root. After the fifth week chops are given, and gradually other articles of food; but for a considerable time a large quantity of milk is still taken each day. This milk cure is apt to constipate very much, requiring great care on the part of the physician who directs it.

For those persons who cannot follow out this method with milk, a butter-milk cure may be tried on similar principles. There is also a whey cure, and a number of cures with different sorts of fermented milk.

CHAPTER XXV.

THE GRAPE CURE.

In nearly all of the famous cures, however, a number of articles of food are permitted. Thus in the grape cure, so popular in certain vine-growing European countries, the patient, in addition to his appointed meals of bread and water, or at least of very easily digestible foods, eats several times a day all the fresh grapes he can hold; rejecting the seeds and skins as unwholesome. The first day he eats a pound of grapes on rising, before breakfast. Some time after breakfast he strolls out to the vineyard and eats another pound; then again in the early afternoon, about supper time, and on retiring to bed. Gradually his grape-capacity increases, till his lunches consist each of five or six, sometimes eight, pounds. When he has reached this point all sense of heaviness after the grape-meals vanishes; he begins to feel quite buoyant; his appetite improves; and he is eager to get out into the vineyard

again. Such a course of feeding, continued throughout the grape-season, amid interesting scenery, under wise supervision and strict general rules of life, is undoubtedly of very great benefit to many chronic invalids.

CHAPTER XXVI.

VEGETARIANISM.

Vegetarianism has been strongly advocated by many persons from religious motives, the ground of their plea being that it is wrong to destroy the life of animals in order to supply an unessential element of food. Such persons have consented, however, to the addition of eggs, milk, cheese and the like animal products to their vegetable diet.

Other persons have advocated an absolute restriction to vegetable food, on the ground that the body and mind are more nearly normal on such diet. They point to numerous race traditions which teach that mankind was originally vegetarian, and was at that time physically superior and longer-lived than nowadays.

Value of a Short Course of Vegetarianism.

By actual experiment, it has been proved that men can live and be comfortable on

purely vegetable diet. There is sometimes a loss of weight during such a course of feeding, which is regained on returning to a mixed diet. As the vegetable residues tend to stimulate the digestive canal and its secretions to healthy action, and as the kidney excretions may become more bland and less inclined to goutiness when animal food is withheld, it is evident that short courses of vegetarianism may benefit many persons in whom the stomach and other digestive organs are not in perfect health.

Benefits of a Purely Animal Diet.

The contrary course—of purely animal diet—is much lauded by some dyspeptics. It may often be pursued for several months without harm; and, indeed, the infant is normally brought up for at least one year without showing any need for vegetable food. Some dyspeptics improve greatly on animal diet in which underdone beef plays a very important rôle.

Proper Subjects for Diet-Cures.

It will be seen that all of these diet-cures depend for their success on one of two prin-

ciples—either the limitation of the work to be done by the feeble stomach to one or a few articles of food which are very easy to digest and leave very little irritating residue, or the withdrawal of certain foods which, by overloading the blood and irritating the kidneys, promote gouty tendencies. It is evident that high livers and corpulent patients are very likely to be benefited by such diets, especially if they be conducted in sanitariums in hilly districts where pure water, fresh air, outdoor exercise, self-control, and early sleeping habits are added to the dietary course. In cities, without these advantages, amid the same old surroundings, and without the mental pleasure of running a strange fad in company with strangers who are also enthusiasts on the subject, these dietary methods may signally fail.

CHAPTER XXVII.

WATER CURES.

The statements just made, in regard to the share which the new surroundings of the patient have in the beneficial influence of diet cures on digestive disorders, are all the more true of the water cures. The patient who persists during his stay at the mineral spring resort in leading a luxurious self-indulgent life, with excesses of food and drink, and without the guidance of a resident physician, is likely to get no benefit at all from the waters.

General Benefits from Drinking Much Water.

Properly taken and combined with a well-regulated course of life, many of the mineral springs, both of this country and of Europe, possess wonderful power in relieving digestive troubles. The mere drinking, from a pure mountain spring, of large

quantities of water not tintured with mineral ingredients has a decided effect on many persons. It not only increases beneficially the kidney secretion, relieving disorders which depend upon over-concentration of that secretion, but (to use a modern scientific phrase applied frequently nowadays to high injections into the bowels) it "washes the blood" also; a large quantity of water passing from the stomach and bowel into the blood and out through the kidneys.

Moreover, under more abundant use of pure drinking water, there is a more active breaking down and casting off of waste tissues from all parts of the body, and a quickening of the upbuilding processes; so that the whole body is more rapidly renewed than when less water was taken. To get these beneficial effects in their fulness the water must not be taken at mealtimes, when it dilutes the digestive fluids and does harm; but must be drunk at stated intervals after meals, and at bedtime.

There is another influence, much more marked, in saline mineral waters, which has much to do with the beneficial influence of

water cures. This is the washing of accumulated mucus (slime) off from the surface of the stomach and upper bowels, downward into the lower bowel. The glass of hot water taken with such relief by many chronic dyspeptics between meals probably has this effect; as likewise the glass of salt and water taken by others on rising in the morning. The Carlsbad waters of Bohemia are very helpful in this respect to many sufferers.

Laxative Waters: Foreign and Domestic.

Some waters of this class go further and carry out the mucus from the bowel—are, as we say, laxative, and promote a thorough cleansing away of all accumulated bowel contents. The Kissingen waters, of Bavaria, and the Marienbad waters of Bohemia, are examples of this class. In America the waters of the mineral springs (High Rock, Congress, Hathorn, Seltzer and others) at Saratoga, New York, are famous for this freshening influence upon the digestive tract; and these, with the new springs every year brought to public atten-

tion, are but the pioneers of the precious mineral water resources which hide still unrecognized in the fastnesses of our upland and mountainous regions.

Some of these waters flow hot from their underground sources, some are effervescent with free carbonic acid gas. Many, as Capon Springs, West Virginia, are destitute of purgative power; but, being alkaline, are very beneficial to certain persons whose gastric disorders are associated with gouty tendencies, and in stomachs which have lost their tone from unknown causes. The famous Vichy water, of France, is of this same alkaline class.

The Choice of Proper Mineral Springs.

There is always some uncertainty whether a water will benefit any particular case. An acquaintance of the writer who went from one healing spring to another in Europe for many years has testified that he never could be certain that a water which worked wonders in a case apparently exactly like his own would succeed with him or not; nor did he despair of receiving marked benefit

from springs which had failed in cases very like his own.

It is evident therefore that in choosing a water-cure for dyspepsia consideration is to be given to many other things besides the chemical ingredients of the water, such as sanitary equipment, high and pleasant location, nutritious food, diverting society, etc. When these are present, one is reasonably sure of some benefit to health, and if the virtues of the water are added, so much the better.

The mineral waters may, as has been stated, be taken at home; often with very great benefit. The Bedford water is a favorite among many others, as both helpful and pleasant in indigestions. There are hosts of others to be had at drug stores; all of them, doubtless, of benefit in certain appropriate cases. Among these may be mentioned the Manacea water, much prized by some patients in obstinate acidity of the stomach.

It is very important to remember that some unscrupulous druggists sell as water from well-known mineral springs mixtures of various salts with city hydrant water,

avowing, if detected, that their product is "just as good" as the real article. As there is apparently no law against such knavery, this method of making money is now very popular among low-grade pharmacists. The reliable druggist, of course, furnishes the natural mineral water from the spring when requested. It is, of course, understood that many of the so-called mineral waters, furnished, for example, at first class soda water fountains, are not from springs, but manufactured according to a formula somewhat similar to that of the spring from which they are named. These are desired simply as a beverage, without any definite therapeutic purpose.

Sulphur Springs.

When stomach weakness is associated with obstinate biliousness and liver disorder, the sulphur springs are sometimes very beneficial. For those who can enjoy sulphur water a trip to one of our southern sulphur springs, as the famous Greenbrier White Sulphur, promises improvement; not only from its healing virtues but from the

beauty and attractiveness of the place, which made it for so many generations the Mecca of southern aristocratic society.

CHAPTER XXVIII.

THE ELECTRIC CURE.

Electricity may be applied to the stomach walls in two ways—either from without or from within. In the former case the patient has the electrodes placed near each other upon the skin of the abdomen; so that the stomach may be included in the sphere of electrical influence, or (to use a more popular expression) so that the current from one electrode to the other may pass through the stomach.

How to Apply It.

In the latter case one electrode is passed down inside the stomach by the aid of a tubular implement, or is swallowed by the patient, enclosed in a little capsule, to which the current passes by a cord down the throat. A pint of water is taken just before, which conveys the current to the stomach walls from the internal electrode, at the same time that it protects the walls from too

great intensity of the current. The outside electrode is placed on the abdomen or upper spine. Either the galvanic or faradic current may be used.

The reports of the value of this method as used by different doctors vary extremely. Some tell us it is a waste of time, others that it works wonders. In drawing our own conclusions, we must take several things into consideration.

Conservative Estimates of the Value of Electricity.

There are quacks in all schools of medical practice, and there are chronic skeptics in all schools. They hinder correct estimation of difficult and elaborate methods of treatment; the first by claiming too much for their pet methods, the others by condemning unfamiliar methods without giving them a fair trial. We must take our estimates rather from conservative, quiet workers who have fully tested the method in question, for a long enough time to eliminate the apparent benefits which emotional and credulous patients are accustomed to

ascribe enthusiastically to every new treatment which appears to be mysterious, or is recommended to them in an impressive way by a money-getting quack or an honest hobby-rider in the profession.

Exercising this proper caution, we are led to believe that, as in applications to the other parts of the body, electricity locally applied to the stomach does accomplish much good in suitable cases. It strengthens the stomach muscle when it is debilitated and helps thus to promote stomach movements, so essential to digestion, and also to overcome undue dilatation of the stomach, by giving its walls better tone.

Its Action in Nervous Dyspepsia.

Its other most helpful influence is in the improvement of the nerve supply of the stomach. As might naturally be predicted, it tends to overcome all purely neurotic stomach conditions, which so often underlie nausea, and loss of appetite, and helps the nervous dyspeptic—that man of countless ailments—back to a more healthy condition of mind and digestion.

The electric cure for the stomach is expensive, very disheartening often after the first few sittings, very disagreeable to many persons when the internal electrode is employed, and, like other cures for digestive troubles, can give best results only when aided by intelligence and self-control in the patient's dietary habits.

CHAPTER XXIX.

THE MASSAGE CURE.

Massage is passive exercise and seeks, by the hand of another, to secure those effects which in healthy vigorous persons are unconsciously promoted by the body's own muscular activities. The athlete, the outdoor worker, the mountain climber, has no need of massage. It is when, through illness, or indolence, or enforced sedentary life, the body has become enervated, relaxed, and unable to endure or to dare wholesome muscular efforts, that massage is demanded.

Right and Wrong Ways of Massaging.

Massage is, practically, either a part of the equipment of sanitariums or a luxury of the wealthy. The ordinary patient is not likely to call for massage nor to receive it. If he hires a cheap "masseur" he will undoubtedly get rubbed—sometimes till all the upper layers of his cuticle are gone—but

he will not get massage. Massage is an art which cannot be acquired without first-class training; and it is probable that its best results are attained by very few, even of the so-called "graduates in massage."

It is not to be denied that mere rubbing with a gentle cushiony hand is, in appropriate cases, exceedingly soothing to pain and comforting to the patient. The panacea for an aching stomach, in many a group of little people, is the mother's hand, and many grown invalids turn confidently in their neuralgias to some friend who "has such a soft touch." But massage, in its perfection, demands an intimate knowledge of anatomy (not a smattering), a mind that can grasp the principles of treatment, and a long course of exhausting training under the immediate and constant supervision of a master in the art.

Where Massage is Advisable.

Massage is applicable in all relaxed conditions of the stomach walls, so, in dilatation of the stomach, it may be of service in restoring muscular tone, and in mechanically

emptying the stomach of its too long retained contents.

The time for its application is from three to six hours after the ingestion of the chief meal, never in the morning on an empty stomach. At first a daily sitting of five minutes is sufficient. Later, sessions of fifteen minutes may be borne with good result. The patient lies on the back, with knees drawn up to relax his abdominal muscles, and the masseur, supporting the right side with one hand, seeks with the other hand to find the stomach and to knead it gently from left to right according to the principles of his art. As the stomach lies differently in different patients, this is no easy task.

Some massage operators work upon the skin lightly covered with a soft garment, others prefer the skin uncovered. Some use ointments, others discard them, as the aim is to effect, not the skin, but the deep-lying tissues beneath it; the hand lying upon the skin, and moving the skin along with it over these deep tissues and organs.

CHAPTER XXX.

THE EXERCISE CURE.

As has been already suggested, massage and electricity are both methods for giving exercise to particular portions of the body which need strengthening. The great advantage possessed by such methods is that, under them, the natural tone of muscle is regained, and the longer they are employed the more competent the body becomes to do its own work and get along without any help from outside. This is not true of certain other methods of cure—the use of non-tonic ordinary drugs, or of alcohol—which beget in the digestive organs a habit of dependence, until finally they become a daily necessity to many patients.

Mountain Climbing and Its Benefits.

There are certain conditions under which exercise yields its best results. It should be taken in the open air; it

should be taken daily; it should be accompanied by a feeling of pleasure; and it should be followed by a sense of invigoration. For an otherwise sound patient with a weak stomach there is no cure like daily mountain climbing with a congenial companion. The getting out of "store" clothes into loose flannels; the newness of everything; the delight of overcoming difficulties in the path; of exploring new trails; of gaining new outlooks of beauty; the enjoyment of that state of physical exaltation when the first fatigue is gone, and, "getting a second wind," the climber feels as if he could overcome anything; the anticipation of good things to eat, that fills the mind on the return journey; and the sound sleep "of the laboring man," that was noted ages ago as one of the sweets of life—all these sensations tell of wholesome reconstructive processes going on within the body; the breaking down of old waste tissues, and their replacement by new materials; the purification of the blood; the quickening of digestive organs; the toning up of muscles long relaxed.

Tonic Influence of the Seashore.

For less vigorous persons, the seaside—preferably in northern latitudes—affords a similar rejuvenation, the inhalation of the ever-tonic sea air gradually bringing about an oxygenation of the body wastes, and a stimulation of sluggish functions, somewhat like the bracing effect of mountain exercise. The great advantage of such tonic agencies is that they act upon the stomach as a part of the whole man, bracing it up without directing attention to it; so that after a time the patient returns to the normal state of forgetting that he has a stomach. The digestive organs begin again to do their work automatically and silently, the mind to busy itself with the things that are above and around, and health is reëstablished.

CHAPTER XXXI.

OUTDOOR GAMES.

But city folk can live in the country for only a short season each year, and dyspepsia is perennial. It is evident, therefore, that other and more convenient methods of securing exercise and fresh air must be sought. The continual invention of new forms of athletics is a move in the right direction. From polo, lacrosse, cricket and baseball down to the gentle saunterings-about of croquet, we have now a great number of wholesome outdoor games, the faithful pursuit of any of which would be of great profit to the dyspeptic.

The Medicinal Value of the Bicycle.

For stomachs which need a little judicious jolting, a daily ride on an easy-trotting horse is just the thing; or, if heavy exercise of abdominal muscles and the relief of flatulence is demanded, what could be desired

better than a good bicycle spin? The energetic young man of our cities can certainly find some outdoor method of toning up his stomach muscles and freshening his blood, if he wants to.

Fighting Dyspepsia on a Large Scale.

There is a commendable tendency nowadays to make city parks useful as well as ornamental. The greater parks are no longer run as afternoon resorts for wealthy persons who own carriages, but are being fitted up with athletic grounds of various sorts, where the ordinary citizen can find vigorous recreation. The smaller parks are still largely devoted to cement walks, flowerbeds and signs of "keep off the grass": but in workingmen's districts small playgrounds are appearing, the public school yards are being utilized for quiet games, and, presently, we may hope to see all new public schools furnished with roof-playgrounds which will be thrown open in summer holidays and out of school hours to the general public.

There is still needed, among the crowded

residences of the poor, the neighborhood playground; a small lot in each block, which may serve as a playground, especially for the girls of the block, where they may get exercise daily and escape the perils of the street. The outlook is hopeful, for with greater opportunities for daily outdoor exercise will come an amelioration of the "great American disease"—dyspepsia.

CHAPTER XXXII.

INDOOR GAMES.

In indoor sports there is likewise an advance. The deliberate invention of basket ball, to meet a demand felt in young men's Christian associations, gives hope that other valuable means for indoor exercise still lie in the fertile brains of our inventive fellow citizens. Gymnasiums are good if not overdone. The trouble with all such indoor sports is that they require a change of dress, and cannot be daily enjoyed, in many cases, without interference with the livelihood of the dyspeptic.

Exercising the Abdominal Muscles.

Some very good chamber exercises are at our service; as dumbbell and Indian-club exercises, which are inexpensive, and the punching-bag, which is worth a good deal to one who can afford the original investment. There are also a number of very

satisfactory wall-pulley exercisers on the market, at very moderate cost; with which any of the regions or muscles of the body can be put into activity. For flatulence and weakness of stomach walls, for sluggish circulation in digestive organs, these are excellent; improving after a time even the most hopeless cases, when no ailment calling for surgical interference is present.

Young people are inclined to exercise. By some unconscious instinct, as it were, they are forever on the move. They—except those abnormal individuals whom we call book worms—will exercise unless prevented.

Danger Signals in Elderly Persons.

It is at the turn of life, when full maturity has been reached—to state it roughly, about the fortieth year—that the danger period is reached. At this period in life of both men and women, while the intake of food is still undiminished by old age, a tendency to inactivity sets in. One must now be driven to exercise. Muscle play no longer gives delight, after meals there is a

tendency to somnolence. Flatulence develops in the bowels, fat is deposited in excess throughout the body—in the abdominal walls, even about the heart. Now, flatulence means want of abdominal muscle power, and excessive fat means imperfect oxidation; both are danger signals, warning that judicious exercise is needed, better muscle-tone and deeper lung-play.

How to Overcome Muscular Relaxation.

The great point of difficulty in the problem is an increasing distaste for vigorous exertion, which, unless timely measures are taken, begets such a relaxed condition of muscle, such overloading with fat, that fatigue quickly sets in and the handicapped heart is unable to meet the demands of the circulation. Violent exertion is now dangerous, and a long course of graduated exercises and carefully guided partial fasting is necessary before the tone of the body can be restored. For business men of such age the great cities furnish classes in movement-gymnastics, where, in a large, well-ventilated down-town room, corpulent, dyspeptic

kings of finance may be found daily in classes of ten or twenty, in gymnasium garb, bending and extending, twisting, tip-toeing, and perspiring, to their great inward advantage, under the direction of a master.

Exercise for Women.

Occasionally the ladies of the community will run a fad of a few months in the same line, renting a gymnasium and marching, trotting, double-quicking around the hall to the music of a piano. But women would rather limit their diet than exercise, and their fad doesn't last more than one season, and then disappears. Even Father Kneipp's attractive fad, with its bare feet and ankles and dewy grass, holds their attention for only a short time.

This is the trouble with adult women. They do not permanently adopt things of an athletic nature, but take them up in a whimsical way, run them to excess for a time and forget them, Bander-log fashion. The probable reason for this is that exercises have been invented by men. They are either modifications of men's violent athletics, or

they are uninteresting to the feminine mind. When a really good woman's game comes along, like croquet—gentle in its movements, permitting of becoming dress, offering companionship with the opposite sex, and an equal chance of winning in competition with stronger man—the men soon tire of its gentleness and vote it stupid, and then the women cut it off from their own list of healthful recreations.

The Essentials of Wholesome Exercise.

For an exercise, to become a permanent favorite, must give pleasure. This is why the wholesome calisthenic and other movements of our girls' schools and colleges are dropped after graduation. Done alone, and without a teacher, they are uninteresting. Few women will continue them in after life, even though they confess that their digestion was better and they felt better while taking them. Occasionally a patient, of mature thought and doomed to invalidism, unless something is done to check enfeeblement of the stomach, will under her physician's urgent advice, take up again the old

familiar movements and continue them daily.

The Value of Dancing.

Dancing seems to be the only artificial exercise that really suits the genius of women. Unless something possessing the same appeals to the feminine interest is invented, it might be well for health enthusiasts to take up dancing; arrange for its performance in the open air, or in buildings roofed and but partly closed; and regulate it as to time and quantity so as to suit the health of each patient. It is useless to go flatly against the instincts of human nature, they are here to stay; and the wise man seeks to guide aright rather than crush them. To give them free rein is sinful, but to stifle them is foolish.

The exercise for woman must be melodious—either in its harmony of movement or in the beauty of its setting and drapery—it must excite pleasure by offering an outlet for enthusiasm and gentler emotions; the physical, athletic side must be unconscious and subordinate—it must not be a treadmill or a “pleasure exertion”—it must

permit of effective indulgence to those who are physically weaker and to those who can intermit it for a week when necessary. The champion tennis girl is always a possible candidate for the infirmary; for she cannot choose her times of exercise without confessing herself a member of a frailer sex and practically pleading for mercy, itself a confession of competitive inferiority.

Varied Muscle-Play.

The English game of bowls—not bowling—with its beautiful grass sward and opportunity for gentler skill, is one that should become popular among mature people of both sexes in America. Fencing, just now the rising fad for women, has possibly a lasting place among drawing-room exercises for women. There are several other old exercises that should be reintroduced and definitely fostered; and new recreations, devised for women by women, are always in demand. At present, educators who realize the need of more perfect physique among women (especially among those who, like the typewriter, must spend all the sunshine

hours indoors at sedentary, nerve-straining work) would do well to promote the use of cheap wall-exercisers which can be put up in any bedroom, and used for a quarter of an hour every morning before dressing, and again, if desired, before retiring. This muscle-play, if attended by simple breathing exercises, will in suitable patients afford pleasure, arouse them to active exertion in the morning, and incline to sleep at night. It will relieve flatulence, make breakfast taste good, cheer the mind, promote good carriage. It should be used wisely, without excessive strain, and regularly, unless some special reason prevents.

CHAPTER XXXIII.

TREATMENT BY DRUGS.

It will be noted that the writer has spoken little of drugs in the cure of digestive troubles. This is not from oversight, but by intention. Drugs are a makeshift, to be employed where natural methods cannot do the work. Drugs are double-edge tools; if inert, they are useless; if powerful, they are usually potent for evil as well as for good; and a long course of study and experience is required before their employment becomes safe. Drugging belongs to the physician, to the patient belongs the intelligent promotion of their effects by applied common sense.

There are few absolute remedies now known. Even in the future, whatever healing triumphs it may reveal, it is unlikely that the premium which has always rested upon common intelligence, self-control, sanitary caution and avoidance of known dan-

ger will ever be removed. Disease is the result of some violation of physical law—usually of flagrant and repeated violations thereof, continued perhaps for generations. These laws are, most of them, known today to the medical profession. For attainment of the highest possible immunity from disease, there is necessary not only that willing dissemination of this knowledge in the community which is the great claim of the profession to public respect, but also an intelligent appreciation and application of this knowledge by the laity.

The "Highest" Education.

Is it too much to look forward to a truer type of religion, which shall teach, in addition to its present truths, a new doctrine of the sacredness of the human body, of the impiety of sinning against known laws of health, of the unnaturalness of disease; to a time when all education which involves interference with full physical development of the young shall be repudiated; to the time when (if we may paraphrase the ancient Scripture warning) men shall realize that

though there be many members, yet the body is a unit; the brain may not say to the stomach "I have no need of thee," for if one member be feeble, then must all the members fail of their best development?

How to Make Sure of a Healthy Stomach.

To be sure of a healthy stomach one should be able to choose his ancestors to remote generations. He should demand a strong, well-developed woman for his mother. He should shun the nursing bottle as a family disgrace. He should live his childhood out of doors in close companionship with earth and the things of Nature. Only when he has thus laid strong and deep the foundations of health should he enter into that intellectual struggle for livelihood from which so many emerge crippled, conquered, wounded to the death.

Even with defective equipment, however, courage and prudence may still give a fairly successful career. It is written that once, hard pressed in battle, a craven soldier broke his sword and fled in terror. The king's son, borne down by numbers and

weaponless, spied that broken sword, and, seizing it, won a great victory that day.

Triumphing Over Difficulties.

All honor, then, to those men and women who, in every profession, cursed by the inward torture of a feeble and diseased digestive system, have bravely fought their way, despite of it, to lives of usefulness and fame; finding, perhaps, that the very intensity of their spiritual fervor in the pursuit of their life-work has proven the strongest tonic for their inward debility.

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